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HARMONY MADE PRACTICAL

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# HARMONY

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BY

O. B. BOISE

NEW YORK

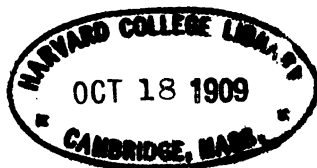
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## PREFACE

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THE "theory of music" is necessarily so abstruse, that teachers and writers cannot succeed in awakening an interest in it, unless they discard many of the finical traditions which have served to veil, and not to reveal, natural forms; which have had a tendency to so exaggerate means as to make the end almost unattainable.

I have endeavored, in this little volume, to present essentials with directness. I class as essentials everything which can contribute to the development of practical musicians.

O. B. B.

*Berlin, December, 1898.*





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# HARMONY MADE PRACTICAL.

## CHAPTER I.

### HARMONIC MATERIAL.

#### The Major and Minor Scales.

**The relation of the scale to music.**—As the *diatonic* scale (either major or minor), based upon any given tone, is a complete exhibit of the material for harmonies in the key of which that tone is the *fundamental* (*tonic*, or key tone); it is quite important that we begin our explorations in the broad realm of tones, with an analysis of this seven-runged tone-ladder (German, LEITER).

This ladder, although apparently short, reaches up to immortality for such climbers as Beethoven. It serves to connect the material and the ideal. God-like men bring their God-like creations down over this ladder to us mortals.

**Definition of diatonic.**—The term *diatonic* is applied to progressions in which the letters, assigned to notes in music, follow in regular, uninterrupted succession (C, D, E, F, etc.), to distinguish them from those that are irregular, or *chromatic*.

**Definition of chromatic.**—The latter consist of successions of half-steps, which result from the repetition of letters modified by *sharps*, *flats*, or *naturals* (C, C $\sharp$ , D; D $\sharp$ , E, F, etc., or C, D $\flat$ , D $\natural$ , E $\flat$ , E $\natural$ , etc.). The black and white keys of the pianoforte, played in regular order, produce a succession of half-steps.

**Diatonic scales.**—*Diatonic* scales are unvarying forms. They are like the yardstick, or the carpenter's rule—they remain the same wherever they are placed: we should, therefore, speak of the major or minor scale on C, D, E, or F; and not of the C, D, E, or F major or minor scales, etc.

**Octave.**—For our first analysis which follows, we shall take an *octave* (8 tones, or degrees) of the major scale. This *octave* includes the duplication of the *fundamental*.

**Steps and half-steps.**—The terms *steps* and *half-steps* are used in determining absolute relations.

**Fundamental.**—A *fundamental* is that tone upon which a scale, a chord, or a key is based.

**The Major Scale.**

SUBDOMINANT.		TONIC.		DOMINANT.	
F		C		G	

1.

Steps and half-steps.      Leading-tone.      Leading-tone.      Leading-tone.

Degrees. I   II   III   IV   V   VI   VII   VIII

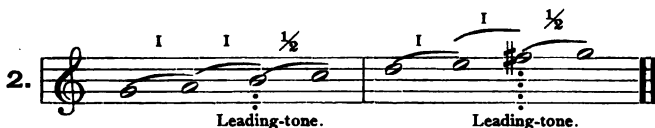
**Relations of the successive degrees.**—We shall, for the present, only refer to the relationship of the large notes (the degrees of the major scale on C) to each other, and to the whole. We find that the 3d and 4th, and the 7th and 8th degrees are half-steps apart. The others are separated by whole steps.

**Groups.**—The octave is composed of two similar groups; viz., C, D, E, F, and G, A, B, C.

**Leading-tones.**—The half-steps above mentioned (between the 3d and 4th degrees of each group) make the 4th degrees (the 4th and 8th of each octave) points of rest, and the well-defined inclination of the 3d degrees toward the 4th, entitles them to the name *leading-tones*.

In considering a key of which any given scale is the exhibit of harmonic material, the name *leading-tone* is applied to the 7th degree only. It alone leads to the key-note, which is the most satisfactory of all points of rest.

#### Illustration of Leading-Tone.



**Illustration of leading-tone.**—Here we have the major scale on G. The 3d degree of the first group (B) bears the same relation to the 4th (C), as that which exists between the 7th (F $\sharp$ ) and the 8th (G); but G being the *fundamental* of the scale and key, and, consequently, a more perfect point of rest, the *leading* character of F $\sharp$  is more pronounced.

**Formation of related scales.**—The above-mentioned groups are not only similar, but they are in a measure independent of each other, and may be dissociated and made to do service in connection with groups added below or above (see small notes).

**NOTE.** The matter of key-relationship, based upon the relationship of these scales, will be taken up later.

#### The Harmonic Minor Scale.

**The reason for, and the source of minor.**—Where composers wish to impart a sombre color to their compositions, it seems essential that the *tonic* chord, above all,

should possess the desired character. We find such a chord on the 6th degree of the major scale—on A in the key of C—and so build our *auxiliary* minor upon this degree, using the tones of the major scale, except for the 7th degree, which we raise (through a natural or sharp, as the case may be) to give it a *leading-tone* character.

NOTE. We apply the term *auxiliary* to a minor having the same signature as any given major, and *parallel* to one having the same fundamental.

### Harmonic Minor Scale on A.

C MAJOR.

A MINOR.

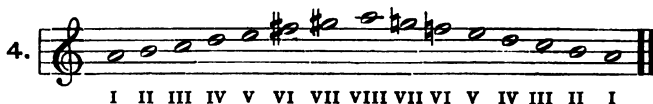


Here we have our minor material for melodic and harmonic purposes. It is strong and characteristic, and constitutes the only minor scale which is recognized in harmony.

We shall, later, have occasion to scan this scale more closely.

**Melodic minor scale.**—The so-called *melodic* minor scale :

### Melodic Minor.



which results from smoothing out the rugged outlines of the *harmonic*, is a colorless abomination. In ascending melodic progressions (especially for the voice) the 6th degree is sometimes raised with good effect; but the 7th degree cannot be lowered from its *leading-tone* estate, without a sacrifice of essential qualities.

## CHAPTER II.

## INTERVALS.

**Definition of an interval.** — As tones are not tangible objects; and as we cannot, therefore, measure the distance between them; we are obliged to consider their relations to each other — their respective degrees of the scale, and the modifications of the same.

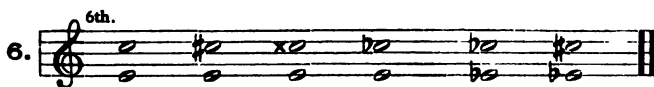
**Formula.** — If we wish to determine the relations between C and any given tone, we count C as *one*, and then the degrees upward or downward, as the case may be, to the letter which represents the other tone; the resulting numeral being assigned to the *interval*, as its name. For instance, in the first of the following illustrations



C is *one*, D is *two*, and E *three*. C and E bear to each other the relation of *one* to *three*, and we call the *interval* a *third*.

In the second illustration, C is *one* and E *six*. The relation being *one* to *six*, the *interval* is called a *sixth*.

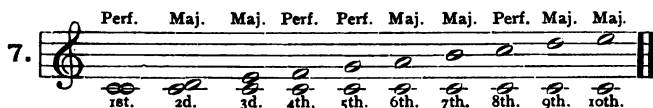
**Closer designation.** — It will be readily seen that, as the letters involved in an *interval* may be variously modified, the designation of the *interval* itself must be adapted to the changed relations as they arise. For instance:





are all *sixths*; but as they all differ, appropriate names to distinguish them must be applied.

**Our gauge.**—If the *fundamental* of the major scale be taken as lower tone, its successive degrees form with it either *major* or *perfect intervals*—the 1st, 4th, 5th, and 8ve are *perfect*, and the others *major*.



**NOTE.** It is hardly worth while to discuss the propriety of the above nomenclature, for our present study is but developing material for our later harmonic combinations. The above 1st, 4th, 5th, and 8ve are purer consonants, remain perfect in *inversion*, and are susceptible of fewer modifications than the others (2d, 3d, 6th, and 7th): the term perfect, therefore, seems applicable, and serves to classify them. *Major* merely means large.

**Varieties of intervals.**—We have altogether *major*, *minor*, *perfect*, *augmented*, and *diminished intervals*.

**Rules for determining modified intervals.**—1. A *perfect interval* made a half-step larger becomes *augmented*.

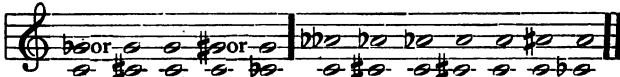
2. A *perfect interval* made a half-step smaller becomes *diminished*.

3. A *major interval* made a half-step larger becomes *augmented*.

4. A *major interval* made a half-step smaller becomes *minor*.

5. A *minor interval* made a half-step smaller becomes *diminished*.

These results may be attained through either modifying the upper, the lower, or both tones, as follows:

8. 

Dim. Perf. Aug. Dim. Min. Maj. Aug.

From the foregoing conditions and relations we deduce the following rule for the measurement of *intervals*:

**Rule for measuring intervals.** — Build a major scale (our gauge) on the lower tone of the two under consideration, and if the upper tone be one of its degrees the *interval* will be either *major* or *perfect*. If the upper tone does not occur in the scale we must institute a comparison, based upon the rules given on page 11 for determining modified *intervals*.

### Inversion of Intervals.

**Definition of inversion.** — The reversal of the positions of the letters or notes concerned in any given *interval* — the upper becoming the lower, etc. — is called an *inversion*.

#### Illustrations.

9. 


3d. 6th. 5th. 4th. 5th. 4th. 5th. 4th. 3d. 6th.

**Rule for determining inversions.** — The number of degrees in the original *interval* subtracted from *nine*, will yield the number in, and, consequently, the name of, the *inversion*. (See above example.)

**Table of inversions.** — A major *interval* inverted

becomes a minor: 10. 

Maj. Min. Maj. Min.  
3d. 6th. 3d. 6th.

and a minor, major: 11.  etc.

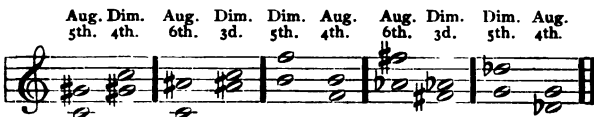
Min. 3d. Maj. 6th. Min. 6th. Maj. 3d.

a perfect interval remains perfect:

12.  etc.

Perf. 5th. Perf. 4th. Perf. 4th. Perf. 5th. Perf. 5th. Perf. 4th.

an augmented, becomes diminished: and a diminished, augmented:

13. 

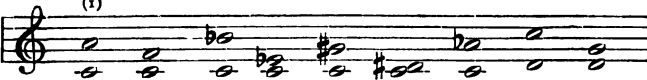
Aug. 5th. Dim. 4th. Aug. 6th. Dim. 3d. Dim. 5th. Aug. 4th. Aug. 6th. Dim. 3d. Dim. 5th. Aug. 4th.

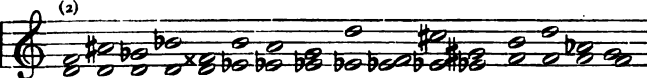
**Recommendation.** — The succeeding exercises will not afford sufficient practice in measuring intervals. Any, somewhat involved, piece of music can be used to supplement them. Skip about, taking tones here and there which seem to present difficulties.

A clear, quick insight into this subject is so essential that over haste in leaving it would result in disability, which would later make itself painfully felt.

Each interval should be measured, then inverted.

#### Exercises.

(1) 

(2) 

(3)

(4)

(5)

(6)



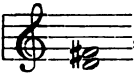

We will apply our rule for the measurement of intervals to a few of the above examples, so that the *modus* may become clear to the student.


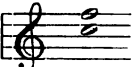
**Example 1.** — We will first take up 14.

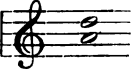


the opening interval, marked (1). We build a major scale on C, and find that A is the 6th degree of that scale, and consequently a major *sixth*, for “the successive degrees of the major scale form, with the *fundamental* of the same, either major or perfect intervals,” viz.: 1st, 4th, 5th, and 8ve are perfect, and 2d, 3d, 6th, and 7th are major. A *sixth* inverted becomes a *third*, and a major *interval* becomes a


minor. Therefore 15. inverted, becomes

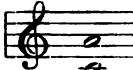
16. a minor third.


**Example 2.**— Our next selection, marked (2),  requires the major scale built on D for its measurement. We find that F# is the 3d degree, and that D-F# would consequently be the major *third*. As  is a half-step smaller than , and as a major *interval* made a half-step smaller becomes minor, the former is a minor *third*. Inverted it would be  a major *sixth*.

**Example 3.**— For example (3) we build a major scale on F, and find that C is the 5th degree, and that  is, consequently, a perfect *fifth*. Inverted it would be a perfect *fourth*. 

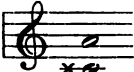
**Example 4.**— For example (4) we build a major scale on A, and find that D is the 4th degree, and that  would consequently be a perfect *fourth*. As  is a half-step larger, it is augmented. Inverted, it becomes  a diminished *fifth*.

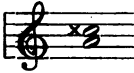
**Example 5.**— As building a major scale on C double sharp would involve considerable difficulty, we form it on C for the measurement of our fifth selection; 

and find that A is the 6th degree, and that 


would, consequently, be a major *sixth*. 


would be a half-step smaller—a minor *sixth*—and

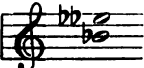
 a whole step smaller, and, consequently, a

diminished *sixth*. Inverted it becomes  an augmented *third*.

**Example 6.**—In the next example we should build our major scale on E $\flat$ , (that being a familiar position). We

find that  is a perfect *fifth*. If we increase the distance of the interval by a half-step by lowering the

E $\flat$  to E $\flat\flat$ , we have  an augmented *fifth*. In-

verted it becomes  a diminished *fourth*.

## CHAPTER III.

### HARMONY.

#### Chord Formation.

**Definition.**—This branch of musical theory treats of the formation and succession of chords.

**The triad.**—The simplest chord formation which has practical value, is the *triad* (three-toned chord). It consists of a *fundamental* with its *third* and *fifth* above.



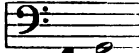
Each degree of the scale may



be taken as the basis for a *triad*.

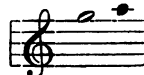
**The four divisions of the human voice.**—As vocal writing—for the four natural divisions of the human voice (soprano, alto, tenor, and bass)—is exceedingly exacting, we shall adopt it for our present use. The natural ranges of average chorus voices are as follows :

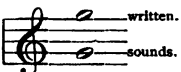


These are the limits, within which it is perfectly safe to write. We shall sometimes overstep them, but they should be kept well in mind. The *bass* can, in case of

necessity, be carried down a whole step to F, 

the *tenor* up to A, , the *alto* to E, 

and the *soprano* to A, . The tenor part is

usually written with the G clef,  written sounds, and an octave above where it sounds.

**Providing for the fourth voice.** In adapting triads to four-voiced writing, we are naturally obliged to duplicate

one of the tones. The *fundamental* is ordinarily best adapted to this double service; hence the major triad on C, written for voices, would appear as follows :



in various positions; but always with a duplicated C in some part.

**Kinds of triads.** — *Triads* will naturally differ according to the size of the *intervals* combined in forming them.

A perfect 5th and major 3d form a major *triad*.

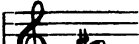


A perfect 5th and minor 3d form a minor *triad*.



A diminished 5th and a minor 3d form a diminished *triad*.



An augmented 5th and a major 3d form an augmented *triad*. 23.  This last species is found on

the 3d degree of the minor scale *only*.



### The Triads of the Major Key.

**Triads of the major key.** — As was stated on page 18 each degree of the major scale may be taken as basis for a *triad*. We give below the *major* scale on C, with triads on its degrees.

24.

Maj. Min. Min. Maj. Maj. Min. Dim.

Tonic. Subdominant. Dominant.

I II III IV V VI VII°

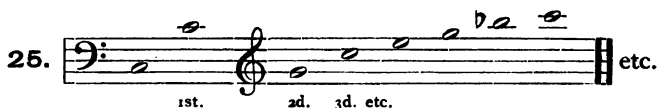
**NOTE.** The small (o) after the numeral VII is always used to indicate the diminished *triad*.

**Primary triads.** — Here we have three major *triads* — on the 1st, 4th, and 5th degrees of the scale; which, collectively, are called the “primary triads;” because they constitute the bone and sinew of each key. Their relationship to each other, and to the whole, is based upon that which exists between their several *fundamentals*.

**Their relationship as based upon the relationship of their respective fundamentals.** — This relationship is ever manifest in music, even in the natural choice of keys for *periods*, or *parts* (sections) in musical *form*. In order to trace this relationship from its incipency, we will now revert to the major scale as given on page 8. We find a group added (in small notes) above the upper division, and one added below the lower division of the major scale on C.

As result, we have the major scale on the three nearest related tones (F, C, and G), if we regard C as central figure, or starting-point.

*Harmonics* or *overtones* are such as sound in connection with any lower tone; augmenting its effect, through contributing to its sonority. The harmonics of C are:



G, is more closely allied to C than is F; because G, is one of the first harmonics of C. This can be proven through the ear, by holding the second G above any C on the pianoforte, and then giving the C a sharp blow, releasing the key at once. The G wire being open—freed from the dampers—will appropriate its own element from the sound C, and make it audible as soon as the C string itself ceases to vibrate.

As will be seen from the list of C's *harmonics*, tones become less dissonant as the actual distance separating them is increased. G, is not sufficiently consonant to sound a *fifth* above the C struck; but will sound as a *twelfth* (an octave and a fifth).

E, the *third* of our major triad on C, is still less consonant—as considered with C—and, consequently, will not make itself audible until we reach the third E above the C struck.

**Triad from harmonics.**—Now if we hold the second G, and the C and E immediately above it, and then strike the lower C:



we shall hear the C major *triad*, which we have evolved from the *harmonics* of its *fundamental*.

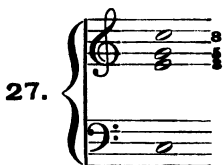
**Subdominant.**— If we try the same experiment, as with G; holding F instead, and striking C: there will be no response, for F is not an element of C's vibrations. If we reverse the order—hold C and strike F—the C will sound, for it is the *second harmonic* of F.

This goes to prove that the intimate relationship which exists between C and G, is reversed in the case of C and F.

The true physical position of F as over against C; is that of the *fifth* below, rather than that of the *fourth* above.

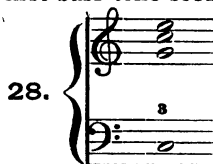
The chord built upon it (in the key of C) is, consequently, called the *subdominant*, to characterize it, and to distinguish it from that built on G, — the 5th degree — which is called the *dominant*; because its tendency to its source (C) enables us to make a satisfactory close on the tonic of the key, thus dominating that tonality.

**Figuring.**— The system of figuring which is in general use, is based upon the relations of the desired upper tones to the given *bass*. The full marking of the *triad* is

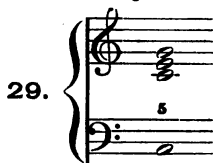


But to avoid unnecessary complications, we allow a *bass* tone, unattended by figures, to indicate a plain *triad*, of which it is the *fundamental*. For the present, figures will only be used in connection with the (uninverted) *triad*, to indicate what *interval* of the initial chord of an exercise is to be taken by the *soprano*.

If we suppose an exercise to begin with the *C major triad*, a *3* over the first bass tone secures this position;



whereas a *5* would call for the 5th in the soprano.



If the octave (8) be desired in the upper *voice*, no figure is placed over the *bass* tone.

When during the course of an exercise — not at its beginning — circumstances make it necessary to employ one, two, or all of these figures to indicate a plain *triad* for a certain *bass* tone, they do not refer to position; but merely call for tones required to supplement the *bass* in forming the desired chord.

**Positions — close, dispersed, etc.** — We apply the term *position* to the disposition of the upper voices; i. e. the *third*, *fifth*, or *octave* in the soprano, and to *close* or *dispersed* positions.

30.

As will be seen from the above examples, the *dispersed position* of a chord results where we assign alternate

tones of the same to the successive upper voices. C, E, G (reckoning upward from the tenor) would be *close* position, whereas C, G, E would be *dispersed*.

The *close position* will best suit our present work. The able composer employs whichever is best adapted to his purpose at any given moment in his writing.

## CHAPTER IV.

### CHORD SUCCESSION.

**The different relations existing between chords.**—The two fundamental principles which govern chord-connection (or succession), are based respectively upon the *related* or *diverse* character of harmonies under consideration. Two chords are said to be *related* when they possess one or more tones in common.

31. Musical notation example 31. It consists of two staves, treble and bass. The treble staff is divided into two sections. The first section, labeled 'a. Related chords.', shows two chords: a C major triad (C4, E4, G4) and a G major triad (G4, B4, D5). A curved line connects the G4 in the first chord to the G4 in the second chord, indicating voice leading. The second section, labeled 'b. Diverse chords.', shows two chords: a C major triad (C4, E4, G4) and an F major triad (F4, A4, C5). No lines connect the notes between these two chords, indicating they are diverse.

Those are *diverse* which differ totally one from the other.

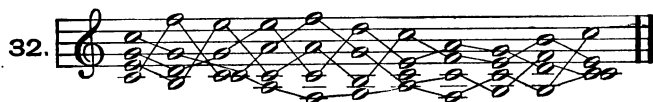
**Rules for chord connection.**—*a.* In the first case, (that of *related chords*), the similar tones should be retained in the same voice in the second *chord*, as in the first; the remaining voices moving to the nearest lying tones which will complete the new *chord*.

b. In the second case (that of diverse *chords*), there being no similar tones, we must resort to contrary motion; i, e., the upper voices must take the next lying position of the new *chord*, moving upward or downward in the opposite direction to that taken by the *bass*.

**Voice leading.** — By contrary motion we avoid consecutive *octaves* and *fifths*, which entirely break the thread of harmonic succession.

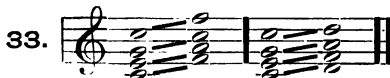
The strength of this thread depends entirely upon the skill with which its fibres are intermingled, through the weaving in and out, the braiding, of its strands.

Good *voice-leading* consists in the adequate interchange of *intervals* by the voices in a chord-succession. This interchange braids the harmonic strands into a sustained homogeneous unity. Tracing the *fundamental*, *thirds*, etc., through the following example will make this principle clear to the student.



In four-voiced writing we have naturally four strands in our thread. They are spun respectively from the *fundamentals*, *thirds*, *fifths*, and *duplications* (or *seventh* when that interval is employed) of the chords concerned.

Two successive *chords* in the same relative *positions* are rigid forms, without the plasticity that would even suggest connection or sympathy.



**Octaves and fifths.** — *Open octaves* and *open fifths* result when two voices move in parallel motion from an

*octave* to an *octave*, or from a *fifth* to a *fifth*. They are never admissible.

In each of the above examples, the two *chords* concerned are in the same relative position, and the *octaves* and *fifths* are manifestations of their lack of natural relationship.

*Covered octaves* and *covered fifths* result when two voices move in parallel motion from some other *interval* to an *octave* or to a *fifth*.

34.      a. Good.      b. Bad.      c. Bad.      d.      e.

The *covered octaves* at *a* are good, because the upper voice moves but a half-step; but those at *b* and *c* are bad, because the upper voice moves a whole *step* in one case, and a *third* in the other. As the distance that the voices move becomes similar, the *octaves* become proportionately disagreeable. When these parallel progressions occur in the outer voices,

35.

they are more assertively bad than when one or both of them occur in the middle voices.

36.

The *covered fifths* at *d*, and *e*, need not be avoided. *Covered fifths* are seldom bad.

**Rule for leading tone.** — The leading tone, when in the *soprano*, should always be resolved upward. The examples which follow will serve to show how the rules so far given are to be applied.

**NOTE.** Something further in regard to *covered fifths* will be found in Chapter VII.

First example worked out.

37.

**Comments on the above example.** — 1. We place C in the *soprano*, because there is no figure over the *bass* tone.

2. E and G are common to the first two chords, so they are retained (tied over) in the *tenor* and *alto*.

3. The E and F *triads* have no tones in common. The upper voices must therefore move downward (to the next lying position of the new chord) in a contrary direction to that taken by the *bass*.

4. Here we have D as connecting tone in the *tenor*. The *alto* moves a whole step (from F to G) in parallel



motion with the *bass*. Were this progression in the *soprano*, where its position would be assertive, the result-



ing covered *octaves* would disturb the harmonic flow. In such cases, it is usually better to discard the connecting tone, and to resort to contrary motion.

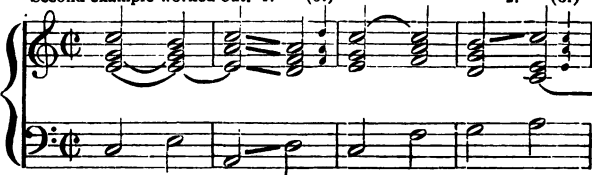


5. This is like 3; except that the contrary motion involves the *soprano* in a skip of a minor third.

6. Here we have contrary motion—the *bass* moving downward, and the upper voices upward.

7. Is somewhat similar to 4. The whole step progression is, in this instance, in the *tenor*; and the continued D in the *soprano*.

Second example worked out. 1. (or) 2. (or)

40. 



**Comments on example No. 2.**— We will discuss only the most important features of this second example. It presents two new points, and emphasizes one of those found in No. 1.

1. Here we find it better to discard our connecting tone (A), and resort to *contrary motion*; because the *bass* and *soprano* would make painful *covered octaves*, if led in a parallel direction. (See small notes.)

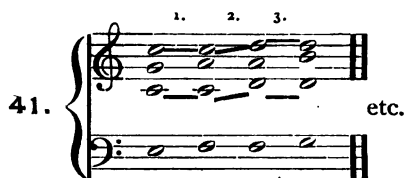
2. In this case the *leading tone* (B) of our key (C) is in the *soprano*, and should be permitted to follow its characteristic inclination (upward a half-step to the key-note); despite the fact that—there being no tones of connection—the remaining voices must move in the opposite direction, in order to avoid *octaves* and *fifths*. (See small notes.)

3. The upward progression of the *leading tone* results in an exceptional doubling in the A minor *triad*—that of the *third*; instead of the prescribed *fundamental*.

The succeeding major *triad* on F calls for C as its 5th.

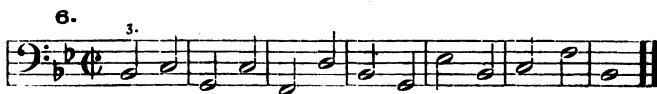
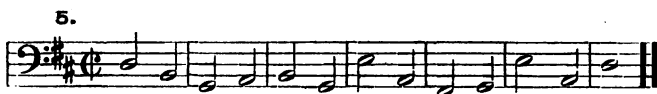
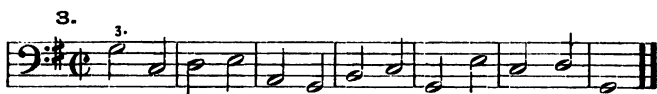
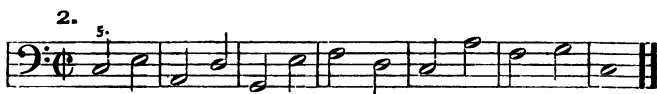
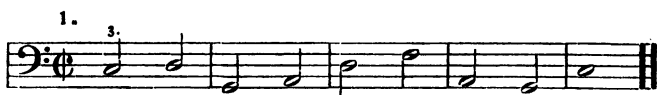
We cannot hold both Cs (*soprano* and *tenor*), for the effect of a held *octave*—with changing harmony—is almost as bad as an *octave* progression. In comparing the advantages of holding the upper or lower C, we find that the former necessitates a jump of a *fourth* upward by both the *alto* and *tenor*; whereas, the latter (holding the C in the *tenor*) results in a smooth, comfortable condition.

Examples of held octaves, with moving harmonies.



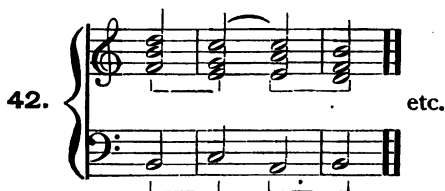
Examples 1 and 3 are very little better than 2.

**Exercises in Connecting the Triads of the Major Key.**



**A sequence defined.** — At 42, we have a *sequential* progression of the bass. The upper voices should be made equally regular in their movements, and the result will be a *sequence*. (See below.)

Illustration.



In the above example the *bass* moves alternately, a *second* upward, and a *third* downward. The *soprano* has the 3d of the first chord in the sequence, and the *fundamental* of the second; consequently, in following the regularity of the bass, it will repeat these positions with the third and fourth chords, etc. The alto and tenor will naturally conform in their movements.

## CHAPTER V.

## THE TRIADS OF THE MINOR KEY.

43. 1 ½ steps.

Min. Dim. Aug. Min. Maj. Maj. Dim.

I II° III IV V VI VII°

**Harmonic material in minor.** — The harmonic material of any given minor key differs from that of its *relative* major (the major having the same signature) only by one tone; but that one tone suffices to produce a variety of chord not found in major keys, viz: — the augmented triad, on the 3d degree, and to impart a characteristic tone-color to the whole key.

**Characteristic leadings and doublings in minor.** — The same rules are applicable for the connection of the *triads* of the minor key that were prescribed for those of the major; but there are conditions in minor which sometimes necessitate exceptional progressions of the 6th and 7th degrees. These degrees are an augmented *second* apart, and this *interval*, like all *augmented intervals*, is unmelodic. It is, therefore, necessary, in *diatonic* progressions, to lead the 7th degree upward, and the 6th downward.

As will be seen in the illustrations which follow, the *triad* on the 6th degree is often made to appear with a duplicated *third*, instead of with the prescribed duplicated *fundamental*.

44.

The musical notation for exercise 44 consists of two systems, each with a treble and bass staff. The first system shows a progression of triads on the 3rd, 4th, 5th, and 6th degrees. The 6th degree triad has a duplicated third. The second system shows a progression of triads on the 6th, 5th, 4th, and 3rd degrees. The 6th degree triad also has a duplicated third. Roman numerals V and VI are indicated below the bass line of each system.

NOTE. A ♯, b, or ♮ unattended by a figure is to be applied to the *third* only above the bass.

**Comments on the foregoing illustration.** — 1. The E and F *triads* having no tones in common, must be connected by contrary motion; but if all the voices moved downward (in contrary motion to the *bass*), the *alto* would move an augmented *second*, which is unsingable. To avoid this, we lead it upward, doubling the *third* (A) of the F *triad*. (See small notes bar 3.)

2. The B and E *triads* have B in common, but we are obliged to discard this connecting tone; for, as will be seen from the small notes, its retention would result in an *augmented* progression. (See bar 4.)

3. In this case, we find the conditions reversed — as compared with No. 1. Here the F *triad* precedes the E, and the peculiar relationship — or rather lack of relationship — between the 6th and 7th degrees of the minor scale is shown in a new light. As the 7th degree has, in diatonic progressions, to be resolved upward, and approached from above, and as these *triads* have no connecting tones, the upper voices must, therefore, avoid *false relations* (*octaves* and *fifths*) by moving in a contrary direction to that taken by the *bass*. We duplicate the *third* (A) of the F *triad*, in order to prepare the *alto* to move downward to the G♯. (See bar 6.)

In concise form, this special rule may be thus formulated:

**Rule for connecting the triads on the 5th and 6th degrees.** — When both *chords* are uninverted, the *triad* on the 6th degree must have its *third* duplicated, whether it immediately precedes or follows the *triad* on the 5th degree.

## Exercises In Connecting the Triads of the Minor Key.

1. 

2. 

3. 

4. 

5. 

6. 

## CHAPTER VI.

## THE INVERSION OF TRIADS.

**Definition of inversion.**—Whereas, the term *position*—as was explained in Chapter III.—refers to the disposition of the upper voices, the term *inversion* refers to the bass only. In whatsoever *position* the upper voices may be, a *triad* is not said to be inverted unless some other *interval* than the *fundamental* is placed in the bass.

The first *inversion* arises from taking the *third*, and the second *inversion* from taking the *fifth* of the *triad* in the *bass*.

45.

Uninverted. 1st inversion. 2d inversion.

etc. etc. etc.

1st in bass. 3d in bass. 5th in bass.

**Figuring of the first inversion.** — As was explained in Chapter III. under the head of figuring, etc., such figures are employed in connection with a given bass tone as will serve to indicate, unequivocally, the chord desired.

For our first *inversion*, "6" will suffice unless we wish to modify the "3" ( $\frac{6}{3}$ ) by a sharp, flat, or natural. This is so seldom required, that we take cognizance of the "6" only, in seeking a name. We call this *inversion* a *chord of the sixth*.

**The reason why chords of the sixth are different.** — Because of the many *positions* in which *chords of the sixth* may be written, as well as the oft-recurring necessity for exceptional duplications, they present the most stubborn difficulties that the student has to encounter. This is largely attributable to the fact that these difficulties come so early in the course of study; i. e., before a basis for judgment has been founded.

There is but one rule for writing the first *inversion* of *triads*; but there are numerous exceptions, some of which presuppose knowledge which the student cannot have acquired at this stage of his studies in harmony. These latter are given here, in order that the subject may be



comprehensively presented. They may be left for future study.

**Rule for chords of the sixth.**—The *bass* tone (3d of the triad) should not be doubled in *chords of the sixth*.

**First exception.**—When two or more *chords* of the *sixth* occur in immediate succession, the *bass* should be duplicated in each alternate *chord*.

Illustrations.

46.

Illustration 46 shows three examples of chord progressions, labeled 1, 2, and 3. Each example consists of a treble staff and a bass staff. In each example, the first chord is a triad (F, A, C) and the second chord is a chord of the sixth (F, A, C, G). The bass line in each example shows the bass tone of the triad being doubled in the chord of the sixth. The first example is labeled '1' and the second '2'. The third example is labeled '3'. The first two examples are followed by 'etc.'.

**Comments on illustration 1.**—In these alternate doublings, the *chords* that precede and follow, as well as the character of the inverted *chords* themselves, are the factors in deciding how (whether with doubled *bass* tone or not) the succession shall begin.

In illustration 1, the 1st *chord* of the *sixth* is a *diminished triad*; but a stronger influence in deciding is the fact that a plain *triad* (on the next degree above) follows the second *chord of the sixth*. The *bass* tone is seldom duplicated in such a case.

**Second exception.**—The diminished *triads*, on account of the *leading-tone* quality of their *fundamentals*, sound best with their *thirds* (the *bass* tone in *chords of the sixth*) duplicated.

**Illustration and comments.** — This will be apparent to the ear in the following :

47.

One and 3 sound much better than 2 and 4. The *fifth* (F of this diminished *triad*) can better stand the accentuation (which results from duplication) than the *fundamental*; hence it is often reinforced as in illustration 5.

**Third exception.** — The bass tone can often be advantageously doubled in a *chord of the sixth*, which results from a change of *bass* only.

#### Illustrations.

48.

**Comment.** — If the *tenor*, in the above examples, should sing the small instead of the large notes, the effect would be more finical than melodic.

**Fourth exception.** — By doubling the bass tone of two *chords* of the *sixth* in succession, we can sometimes secure a more natural progression of certain voices, which is ample compensation for the over-accentuation of the *third* of the *chord*.

## Illustrations.

49.

NOTE. — The fifth and sixth exceptions are for later application in connection with chords of the seventh.

**Fifth exception.** — The bass tone is often duplicated in order to prepare a *seventh*.

## Illustrations.

50.

**Sixth exception.** — The bass tone is often duplicated through the resolution of the *seventh*.

## Illustrations.

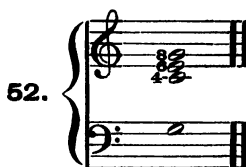
51.

**Comments on chords of the sixth.** — The foregoing rule and six exceptions, with their attendant illustrations, will serve to guide the careful student to correct solutions

of the various *chord* of the *sixth* problems. But as there are often several equally correct solutions of any given problem (only differing in their adaptability to the musical situation in hand), comprehensive grasp and ripe judgment are requisite in order to secure the best results.

### Chords of the Sixth and Fourth.

**Figuring of the second inversion.** — Where, as in the case of our Harmony study, basses are provided for the student, the second *inversion* of the *triad* will offer no difficulties. The full figuring is



but the 8 is only used when necessitated by something which has immediately preceded it. The 6 and 4 indicate respectively E and C. These tones with the bass (G) complete the chord, which is called a chord of the *sixth* and *fourth*.

**Rule.** — The bass tone should always be duplicated in these chords.

**Difficulties to come.** — The conditions which make *chords of the sixth and fourth* either practical or undesirable will be discussed after we have discarded figured basses, and have entered upon the application of our completely developed material, in the harmonization of melodies.

The following exercises worked out will bring to light some of the peculiarities of the inversions of *triads*.

## Exercises Worked Out.

53.

1. 2. 3.

6 6 6 4

(a.)

4. 5.

6 6 6 4

54.

6. 7. 8.

3 6 6 6 6 6

9. 10. 11.

6 6 6 6 6 4

55.

**Comments on worked out exercises.** — 1. Comes under exception 3.

2. Could not have its bass tone doubled because followed by a plain *triad* on the next higher degree of the scale.

3. Chord of the *sixth* and *fourth*, bass tone doubled.

4. Connecting tone discarded, in order to avoid unpleasant *covered octaves*. (See small notes.)

5. This *bass* tone is the *leading-tone* of the key, and is therefore not adapted to doubling.

6. Here the first of the two *chords of the sixth* is a diminished *triad* (see exception 2), and the second is followed by a plain *triad* on the next higher degree.

7. Results from a change of *bass* only. (See exception 3.)

8. Is the same as the above (7).

9. Could have been written as indicated by small notes, but the descent to the G secures a change of position in what follows, and avoids the monotony which would arise from again repeating the progression — D, C.

10. Diminished *triad*, — *bass* duplicated.
  11. Sixth and fourth, — *bass* duplicated.
  12. Here the *chord* of the *sixth* results from changing the *bass* only, but it is followed by a plain *triad* on the next higher *degree*, so the *bass* tone could not be duplicated.
  13. Is an illustration of exception 4.
  14. Had it been desirable to obtain a higher position of the voices, the upper D could have been held.
  15. The *soprano* could quite as well be led to G.
  16. Illustrates exception 3.
- a. Here the large notes involve doubling the leading-tone (the bass of the second chord), in order to secure a more forceful progression. The small notes are more correct, but less effective.

In writing *chords* of the *sixth*, one should take all conditions into account,—the position of the chord itself, as well as the preceding and succeeding harmonies; and, after considering the possibilities, choose that disposition of the voices which seems to best secure strength, variety and smoothness.

#### Exercises in the Use of Chords of the Sixth, and Sixth and Fourth.

1.

2.

3.





## CHAPTER VII.

## CHORDS OF THE SEVENTH.

**Definition.** — These chords are four-toned, and appear on each degree of the major and minor scales. They consist of a *fundamental*, *third*, *fifth*, and *seventh*.

**Characteristics of the seventh.** — This new element — the *seventh* — with its varying grades of dissonant character (over against the *fundamental*) imparts new shades of tone-color, and a definite inclination to our harmonies: because the ear always seeks points of rest. A dissonance has a purely transitory quality, which moves on to rest, by its resolution into a succeeding consonance.

The musical sense anticipates this succession; and thus, through creating anticipation, the *seventh* or any dissonant *interval* outlines the forward path.

## Chords of the Seventh in Major.

56.

Maj. triad. Maj. 7th.	Min. triad. Min. 7th.	Maj. triad. Min. 7th.	Dim. triad. Min. 7th.
Min. triad. Min. 7th.	Maj. triad. Maj. 7th.	Min. triad. Min. 7th.	

Dominant.

I    II    III    IV    V    VI    VII

## Chords of the Seventh in Minor.

57.

Min. triad.	Aug. triad.	Maj. triad.	Dim. triad.
Maj. 7th.	Maj. 7th.	Min. 7th.	Dim. 7th.
Dim. triad.	Min. triad.	Maj. triad.	
Min. 7th.	Min. 7th.	Maj. 7th.	

Dominant.      Diminished.

I      II      III      IV      V      VI      VII

**Varieties of chords of the seventh.**—The value of these chords (as harmonic material) is somewhat in inverse ratio to their degrees of dissonance.

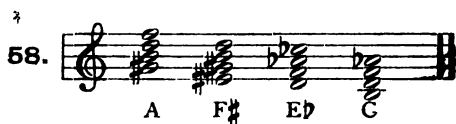
We find the most disagreeable combination (a minor *third* and major *seventh*) on the 1st degree of minor. This and the augmented *triad* and major *seventh* on the 3d degree are seldom used.

The *major triads* with *major sevenths*, on the 1st and 4th degrees of major, and on the 6th of minor, are so dissonant that only the strictest conformity to rule can make smooth their rugged sharpness, and adapt them for use in pure part-writing.

Next in order come the minor *triads* and minor *sevenths*, on the 2d, 3d, and 6th degrees of major, and the 4th degree of minor. These are less dissonant than the two preceding classes, because their *sevenths* are further removed from the *octave*.

On the 7th degree of minor, there is a unique formation—a diminished *triad* and a diminished *seventh*. This chord is, so to say, so “noncommittal,” that, to the ear, it has no key affiliations. By changing their names,

each of its *intervals* can be made a *fundamental*, a *third*, a *fifth*, or a *seventh*, thus :



Here we have four tones molded successively into the *diminished seventh chord* of each one of four equally unrelated keys. This equivocal quality adapts the chord for use as a means of modulation. It is often employed when unsuited to special musical situations, when routine and natural thematic development should suggest something more adequate. The composer often stumbles over this and like easy methods, and falls into the commonplace.

On the 7th degree of major, and the 2d of minor, we have *diminished triads* and *minor sevenths*. These chords are extremely serviceable.

On the 5th degrees of both major and minors, we find our strongest combination — a major triad and a minor seventh. The *fundamental* of this chord is the fifth from the key-note (dominant), (this relationship was considered in Chapter III.), and the *third* is the *leading-tone*.

These characteristics make this chord the natural leader to the *tonic* — as a final point of rest.

There are three things to be considered in the treatment of *chords of the seventh*, viz.: *preparation*, the *duration of the seventh*, and its *resolution*.

**Rule 1: preparation.** — *Preparation* consists in the tone (which is *seventh*) being in the same voice in the previous chord.

## Illustration.

59.

**Exception to above rule.** — The dominant *seventh* may be taken without *preparation* if the *fundamental* be held over from the previous chord.

**Rule 2.** — The *fifth* of any *chord* of the *seventh*, excepting the *diminished*, may be omitted and the *fundamental* be duplicated; but this is the only omission and the only duplication that is permissible.

## Illustration.

60.

**Rule 3.** — The *seventh* must be resolved one degree downward in the same voice as that in which it was prepared and held:

61.

Preparation. Resolution.

**Disposition of the third and fifth.** — The natural progression of the *third* is one degree upward, and that of the *fifth* one degree downward; but these progressions are frequently somewhat dependent upon conditions.

Illustration.

62.

The illustration shows a sequence of six chords in a piano setting. The first two chords are in C major, and the next four are in D major. The chords are labeled 1 through 6. The bass line shows the progression of the fifth and third degrees of the chords: 7, 7, 6, 6, 6, 7.

**Comments.** — 1. Had the *soprano* moved upward to D (see small notes), bad *covered octaves* would have resulted; so the *third* is led *downward*.

2. Regular. (See illustration 64).

3. Here we have the *seventh* in the bass, and smoother voice leading is our compensation for diverting the tenor, B (the *fifth*), from its natural course downward.

4. F, the *third* of the chord on D, is held as *seventh* in the next chord. The *fifth* moves one degree downward.

5. The only irregularity here is the upward progression of the *bass* from D (the *fifth* of the chord).

6. B, the *leading* tone, moves downward, because in a middle voice its natural leading (to C) would have re-

sulted in the omission of the *fifth* (G) of the final chord. (See small notes).

**Rule for omission of fifth, etc.** — When two or more *chords of the seventh* occur in immediate succession, the *fifth* must be omitted and the *fundamental* duplicated in each alternate chord.

Illustration.

63.

**Supplementary rule.** — The fifth cannot be omitted from a *chord of the seventh*; 1, when the succeeding *bass* tone is a chromatic alteration of that chord's fundamental; nor 2, when the *bass* moves either up one degree; or 3, down two degrees, whatever the chords may be which occur on these tones.

Illustration of the above.

64.

Good. Bad. Good. Bad. Good. Bad.

**A succession of uninverted chords of the seventh.** — In writing a succession of uninverted *chords of the seventh*, the all important question is, "how shall the alternation begin" — with a full chord, or with one from which the *fifth* is omitted.

The conditions to which the last given rule is applicable are, when present, a deciding element ; for in demanding that the last *chord of the seventh* shall be complete, they regulate the order of succession. (See page 49.)

Sometimes the preceding *chord* fixes the succession for the whole series.

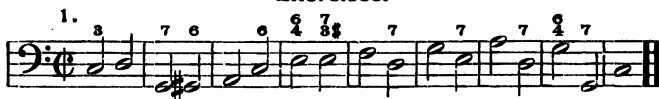
65. <sup>1.</sup>

66. <sup>2.</sup>

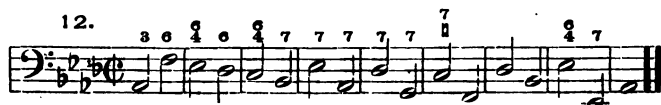
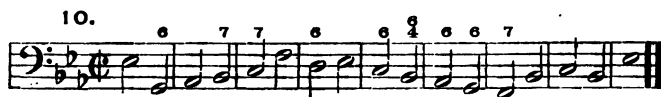
**Comments.** — In example 1 we are obliged (according to the supplementary rule) to write the last *chord of the seventh* full, which (counting backward) should make the first also full. The latter would, however (in any case), be written without the omission of the *fifth*, because the upper voices are *prepared* by the preceding (G) *chord*. In example 2 we could not take A (the fifth, without making *open fifths* between the *alto* and *bass*. (See small notes.) This illustrates the following rule :

**Rule for chord of the seventh preceded by plain triad.** — The *fifth* must be omitted from an uninverted *chord of the seventh*, when preceded by a plain *triad* on the next lower degree of the scale.

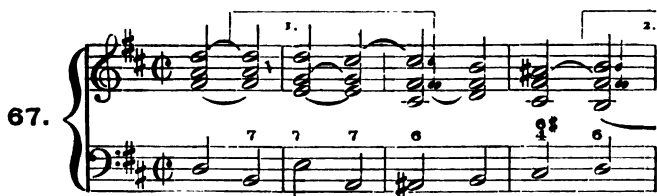
## Exercises.







No. 9 worked out.



**Example 1. Melodic progression of voices.**—Of this series of *sevenths*, we find that the first *chord* is wholly prepared (all of its intervals being held over from the previous chord), and that the third *seventh* is followed by a *chord of the sixth* on  $A^\sharp$  (a chromatic alteration of the fundamental).

These conditions necessitate writing the first and third sevenths full, and the second with doubled *fundamental* and omitted *fifth*. The *chord of the sixth* on A $\sharp$  could have been written, as shown in the small notes; but the effect of doubling the F $\sharp$  is thinner than that resulting from using the two C sharps.

All else being equal, a duplication of the *octave* is more sonorous and fuller than a *unison*.

68.

In each of the foregoing examples, *a* would be better than *b*, unless the latter in a greater degree conserved melodic outline. Melody is the soul of music: harmony is but the body. We should endeavor to endow each voice with logical melodic sequences; i. e., if we wish to interest individual performers, and by this means secure the highest results.

**Example 2.** — Had we wished to raise the position of the voices, the small notes would be available.

**Example 3.** — We are obliged to duplicate the *bass* tone (G) in the *chord of the sixth*, in order to prepare the following *seventh*.

**Example 4. Special rule for sevenths followed by the next higher degree.** — In resolving a *chord of the seventh* in the original *position* (when the tones stand in the order in which they occur, if named from the *fundamental* upward) to a plain *triad* on the next higher degree of the scale, the *seventh* and *fifth* must move downward, and the

*third* upward. This results in the duplication of the *third* of the triad. (See also illustrations 62 <sup>(2)</sup> and 64 <sup>(2)</sup>.)

**Exceptional covered fifths.** — Forcing the *third* of the *chord of the seventh* downward would produce disagreeable *fifths*. (See small notes.) They are in reality *covered* for the first (C $\sharp$ -G) is diminished; but this and similar progressions cannot well be given prominence. In the above example, the upper voices are closely grouped, and are removed a great distance from the *bass*. This makes the movement of the *soprano* and *tenor* more strongly marked; whereas, if the voices were in dispersed position,



the progression would be a matter of judgment. If the order be reversed



the covered *fifths* are entirely unobjectionable.

**Example 5.** — The *fundamental* being held, the *chord of the seventh* (dominant) may be taken in any desired position and form.

## CHAPTER VIII.

## THE INVERSIONS OF CHORDS OF THE SEVENTH.

These four-toned *chords* are susceptible of three *inversions*, for each of their *intervals* may be taken by the *bass*.

71.

1st inver.  
3d in bass.

2d inver.  
5th in bass.

3d inver.  
7th in bass.

NOTE. — In figuring *basses*, the largest figure is always placed at the top; i. e.,  $\begin{smallmatrix} 7 \\ 3 \\ 2 \end{smallmatrix}$

**First inversion of the seventh.** — With the *third* in the *bass*,  $\begin{smallmatrix} 7 \\ 3 \end{smallmatrix}$  (omitting the 3) is ordinarily sufficient figuring. The 3 must be employed where we wish to modify that *interval* above the *bass*. This *inversion* is called the *chord of the sixth and fifth*.

**Second inversion.** — It is seldom necessary to use the 6 in indicating the chord when the *fifth* is in the *bass*, so the second *inversion* is called the *chord of the fourth and third*.

**Third inversion.** — Except where the 6 or the 4 are to be modified, 2 is quite adequate to indicate the *third inversion*, for it (2) calls for the tone on the next higher degree (G, in the foregoing illustration). Of tones on the two next lying degrees, the upper will, for our present study be the *fundamental*, and the lower its *seventh*, so we build our chord upon the tone indicated by 2.

**Rule for writing the inversion of the seventh.** — The rules that regulate the use of plain *chords of the seventh*, apply equally, with one exception, to their *inversions*. This exception concerns omissions and doublings, for *inversions* of the *chord of the seventh* admit neither.

Worked out exercise.

72.

1. 2. 3. 4. 5.

**Comments.** — 1. It must never be forgotten that sustained tones are not necessarily monotonous, for (with changing harmonies) we usually find ample compensation for *their* inactivity in the marked activity of the *remaining* voices. Here the *bass* progression is strong, and the *tenor* makes a more dignified effect than would result from changing to C (with the *chord of the sixth*) and then returning to E.

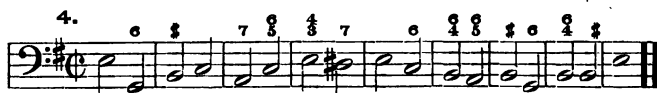
2. The *chord of the seventh* on G must be used complete; because it is followed by a chord having a modification of its *fundamental* as bass tone (G#). (See illustration 64 <sup>(1)</sup>.)

3. Here we have a *chord of the sixth*, the *bass* tone of which is doubled, not only because it is the resolution of the previous *seventh*, but also in order to prepare the *seventh* which follows.

4. The small notes could have been used, had they produced a better musical outline.

5. Where the *fundamental* is prepared, the dominant *seventh* may be taken in almost any desired position. (See illustration 67 (s).)

## Exercises.



7.  $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$

8.  $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$

9.  $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$

10.  $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$

11.  $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$

12.  $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$   $\text{C}^{\flat} \text{E}^{\flat} \text{G}^{\flat} \text{B}^{\flat}$

## CHAPTER IX.

## IRREGULAR RESOLUTIONS OF SEVENTHS.

**Irregularities named.** — In order to impart to the *bass* more melodic flow, and to the harmonies greater flexibility and new shades, the *seventh* is sometimes resolved by *substitution*, by *absorption*, or by *chromatic change*.

**Substitution defined.**—The first named arises when the voice having the *seventh* is forced one degree upward by the downward progression (over the *seventh* to its natural tone of resolution) of some other voice.

**A succession of complete uninverted sevenths.**—It will be seen in the following illustrations that *substitution* makes it possible to write a succession of uninverted chords of the *seventh* without the prescribed omission of the *fifth*, and doubling of the *fundamental* in alternate chords, as in page 49. (See No. 1.)

Illustration of Substitution.

73.

The illustration consists of two systems of musical notation for piano accompaniment. The first system shows a sequence of three chords in the right hand, with the first two marked '1.' and '2.'. The left hand has notes marked with figures 6, 7, 7, 7. The second system shows a third chord marked '3.'. The left hand has notes marked with figures 7, 6, 6, 7. Arrows indicate voice leading between the systems.

**Comments on the foregoing illustration.**—1. Here we have a series of three uninverted chords of the *seventh*. They are all complete, because the first two *sevenths* are resolved by *substitution*. Of the first *seventh* chord (on D) C is the *seventh*, and it is forced up to D,



by the progression of the *bass*, (over C to B), the tone of resolution. A, the *seventh* of the second, is forced to B by the movement of the *bass* to G.

2. We hold the upper C, and take *dispersed* position, in order to introduce a *substitution* in one of the upper voices. This is found at 3, where the soprano moves down to E—the tone to which the *seventh* (F in the tenor) should under ordinary circumstances resolve. This necessitates taking the *tenor* to the next higher degree (G).

**Absorption.**—When the chord following the *seventh* does not contain the tone of resolution, but adopts the *seventh* as one of its intervals, the result is called a *resolution by absorption*.

#### Illustration.

74.

The illustration shows a sequence of chords and intervals. The first system (labeled 1. and 2.) shows a progression from a C major chord to a C minor chord, with intervals 7, 7, 9, 8, 9, and 4. The second system (labeled 3. and 4.) shows a progression from a C minor chord to a C major chord, with intervals 6, 2, 6, 4, 9, 6, and 7. The bass line moves from C to B to G, and the soprano line moves from C to E to G.

**Comments.**—1. The second chord (the *sixth* and *fourth* on A) contains no E, but counts F as one of its *intervals*, so the *seventh* is absorbed into it.

2. F, the *seventh* in the *sixth and fifth* chord, is held as the *fundamental* of the chord of the *sixth and fourth*.

3. This is a similar example, G (the *seventh*) being retained.

4. Here the *dominant seventh* is taken without preparation. Octave jumps are treated exactly the same as held tones; and a sustained, or prepared *fundamental* allows the *seventh* to enter unprepared.

**Chromatic change.** — When the voice having the *fundamental* moves a half step downward, the *seventh* will usually be *chromatically* raised.



This and numerous other examples (always involving modulation) are of no present value to the student. They are radically free, and require experience to make them valuable accessories to harmonic richness.

**The seventh by step — not skip.** — Except in changes of position of the voices in one and the same *chord*, the voice having the *seventh* must of necessity either progress one degree upward, or downward, or remain stationary.

**Where valuable.** — These irregular resolutions of the *seventh* are especially useful in *polyphonic* writing, where the composer endeavors to make the *bass* an important factor in the *thematic development*.



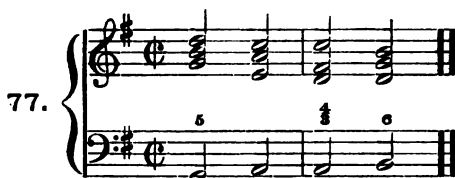


**Dispersed position.**— The time has now arrived for the student to employ the *dispersed position* of the upper voices: not necessarily throughout the exercises, but for such parts of them as will gain breadth and fullness by means of this more equal distribution of the tones of the harmonies. When the *soprano and bass* are far apart, i. e., as at the beginning of Ex. 8, the harmonies will make a much richer, more substantial effect if employed in dispersed position. As will be perceived in the second of the following illustrations, the great space between the *bass and tenor* is an element of weakness:

Exercise 8.

76.

etc.



NOTE.—When employing *dispersed position*, the *tenor* may be written with the bass or with the upper parts, as found most convenient.

**Change of position.**—A *chord of the sixth* (because of the duplication in the upper voices) usually offers an opportunity for a change of position—from close to dispersed or *vice versa*.



**Comments on illustrations.**—These progressions are equally correct; the student's task is, therefore, to choose that leading of the voices which will yield the best effect.

**Close position sometimes necessary.**—Some passages can only be written in close position because of the *parallel fifths* which would result from *inversion*.





**Comments on illustrations.** — 1. The *fourths* between the *alto* and *tenor* in *close position* become *fifths* in *dispersed*.

2. The *fourths* in *dispersed position* remain *fourths* in *close*.

3. Here the *fifths* remain, *in spite* of the change of *position*. Faulty progressions which arise in *close position*, cannot be corrected by taking the *dispersed*, unless the *soprano* be changed. The above chord-connection can be written only in *dispersed position*, as at 2 (with B in the upper voice).

## CHAPTER X.

### Altered Chords.

**The natural.** — We have, so far, considered only Nature's chords; which although differing in grades of value to the composer, sustain their respective parts in the regular harmonic system. They are legitimate because formed by combining degrees of the *major* or *minor scales*.

**The artificial, and the danger disguised by their attractions.** — *Altered chords* are the inventions of men — perhaps of men who desired highly colored, piquant cloaks to cover poverty of ideas.

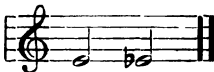

Piquancy is often highly desirable, but the composer who devotes too much attention to securing it (without regard to its adaptability as means to the desired end), is quite sure to become demoralized. The color imparted by these *chords* is, in some instances, exceedingly rich; but these two attributes—piquancy and color—are at best superficial. They appeal to discriminating taste and judgment only when applied to the adornment of well defined, logically developed ideas.

These *altered chords* are such an element of danger to the young musician, that we should not mention them, except for the desire to make our list of harmonic resources complete. They should never be used where a common chord can be made adequate.

**How formed.**—They are produced by *chromatically* changing one or more *intervals* of certain adaptable *chords*.

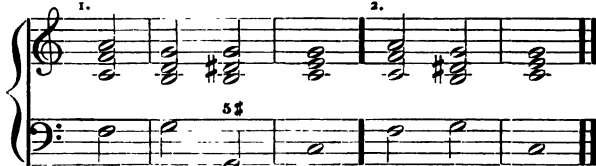
**Tendencies, etc.**—The changed *intervals* are *passing tones* which point upward if raised, and downward if lowered,

Downward.

80.  81. 

Upward.

and they are often substituted for the original form of the *interval*, which is elided. For instance, the *augmented triad* could be used on the fifth degree of C *major* in either of the two following forms:

82. 

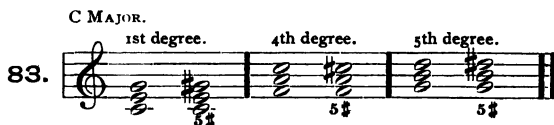
In the first example, D sharp is a *passing tone*, from D to E. In the second it is substituted for D, but possesses a pronounced *upward passing tone tendency*.

The chief *altered chords* which theorists have thus far recognized, are:

- a. *The augmented triad;*
- b. *The augmented chord of the sixth;*
- c. *The augmented chord of the sixth, fourth, and third, and*
- d. *The augmented chord of the sixth and fifth.*

### The Augmented Triad.

**When natural and when artificial.**— This formation is a natural chord, when used in connection with the harmonies of the *minor scale* (on the third degree of which it is found); but it is artificial when formed from the *major triads* on the first, fourth, or fifth degrees of the *major scale*, and introduced into the *major key* as a substitute for one of its natural harmonic elements.



**Inversions of the augmented triad.**— This *triad* is also used in its *inversions*, although the second (the *chord of the sixth and fourth*) is not adapted to four voiced setting; because the *bass* tone being *chromatically* raised cannot be duplicated.

As modified *intervals* have a marked *tendency* toward the next higher or lower degrees, they can ill endure the accentuation resulting from doubling.



84.

1st inversion. *a or b.* 2d inversion.

OR

6 3 3 6 5 3

Not good.

**Augmented triad with the seventh and inverted.**—  
The *augmented triad* is sometimes used with its *seventh* added.

85.

Degrees. I IV V

That on the fifth degree will be most often found practical, although it can never appear in the above given position; because of the *diminished third* between the raised *fifth* and the *minor seventh*, which destroys the harmonic significance.

With this special exception in the case of *this* chord, all positions and *inversions* may be employed when in keeping with the musical situations.

86.

Bad. Dim. 3d. Aug. 6th. Good. Doubtful.


7 3 3 3 3 3 3 3

2d. inver.

**Departures from cadencing progression of the bass.**—  
The chords on the first and fifth degrees admit of being

written in forms similar to the above; but a departure from *cadencing bass* progressions, which is optional here, is almost imperative in resolving the one on the fourth degree; for it leads to the *diminished triad*, which is not a satisfactory point of rest.

#### A Few Departures from Cadencing Bases.

87. 

C: V      I      IV      Cadencing bass.

#### The Augmented Chord of the Sixth.

**Origin and affiliations.** — This formation is the *first inversion* of a double *diminished triad* (a combination of a *diminished third* and a *diminished fifth*, which may result from the requisite change in the *intervals* of either a major or a minor *triad*), and has no direct *key* affiliations; i.e.,

88. 

D. d. triad.      Aug. 6th.

can occur as a *passing chord* in G minor, G major, or D major.

89. 

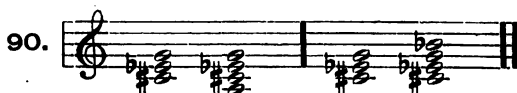
G. minor.      G. major.      G. major.



**Doubling the fifth.** — The *fifth* (G in the examples just given) is the only *interval* of these chords which is suited to doubling; the tendency of both the *fundamental* and the *third* being too strong — upward or downward.

### Augmented Chords of the Sixth, Fourth, and Third; Sixth and Fifth, etc.

**One of their sources.** — By adding, in one case the major *third* below, and in the other the diminished *seventh* above its root, to the *double diminished triad*, we produce two additional altered *chords*.



**Practical forms.** — The following are the *inversions*, and some of the practical *positions* of these harmonies.



$\begin{matrix} b. \\ \text{etc.} \end{matrix}$

$\begin{matrix} 7b & 6\# & 6b & 4\# & 5b & 6b & 4\# & 3b \end{matrix}$

**Separation of the tones constituting the diminished third.**—It will be observed that in each of the above forms the  $C\sharp$  and  $E\flat$  are separated. All the above positions may be used; but not one of them will produce an agreeable effect if in an unsuitable environment.

**Key affiliations.**—Such chords may be introduced from, be resolved into, the same keys as the *augmented chord of the sixth*; and they are fuller and more grateful to the ear than this harmony.

**The most familiar forms.**—Those *inversions* marked with crosses (+) are most frequently used; although more from custom than because of qualities that distinguish them from the others.

They are, in *a*, different positions of the *second inversion* (the *chord of the sixth, fourth, and third*), and in *b*, of the *first inversion* (the *chord of the sixth and fifth*). We prefix *augmented* to each of these names because of the relations between  $E\flat$  and the  $C\sharp$  (an *augmented sixth*).

**Names, old and new.**—They are the only positions of these *chords* that theorists have seen fit to christen; indeed, the others are usually ignored. There is no sufficient reason for such sharp discrimination. We shall, therefore, give these *chords* names evolved from the re-

lations of the *intervals* of each to their *fundamental*. That on A does not lend itself readily to chord-designation. It can only be adequately described as a *chord of the major third, diminished fifth, and minor seventh*.

The other on C sharp, page 71, may be called a *double diminished chord of the seventh*.

The following examples will serve to illustrate some of the common modes of treating these *chords*.

**Chord of Major Third, Diminished Fifth, and Minor Seventh on A, in G Minor.**

92.

**The same in G Major.**

93.

**In D Major.**

94.


### **Double Diminished Chord of the Seventh on C $\sharp$ in G Minor.**

95.  Musical score for exercise 95. The treble staff contains a series of chords: G major (G-B-D), A major (A-C-E), B major (B-D-F#), C major (C-E-G), D major (D-F#-A), E major (E-G#-B), F# major (F#-A-C#), and G major (G-B-D). The bass staff contains a series of chords: G major (G-B-D), A major (A-C-E), B major (B-D-F#), C major (C-E-G), D major (D-F#-A), E major (E-G#-B), F# major (F#-A-C#), and G major (G-B-D). The exercise is marked with a '95.' and a '1.' in the top right corner.

**In G Major.**

96.

**In D Major.**

97. 

In examples *a*, *b*, *c*, and *d*, we are obliged to anticipate the resolution of the *seventh* in order to avoid parallel *fifths*.

**Resumé.** — Before leaving this subject, we will give condensed formulæ for the formation of these altered chords; starting, in some instances, from other sources than those so far mentioned: and also pointing out some natural tendencies while showing certain irregular resolutions.

## Formation.

**Augmented triad.** — The *augmented triad* may be formed from any *major triad* by *chromatically raising* its *fifth*. It appears *inverted* and with its *seventh* added.

98. Aug. triad. Seldom used  
four voiced.

C major: I IV V C E

99. Aug. triad with seventh.

I IV V C E F G

The *augmented chord of the sixth* may be formed from the *first inversion* of any major or minor triad by chromatically raising the *fundamental*; and in case of the major, also lowering the *third*. The unmodified *fifth* is the only *interval* that can be doubled. (Compare illustrations 47<sup>(s)</sup> and 89.)

100. Major. Minor.

6th. Aug. 6th. 6th. Aug. 6th.

**Other sources.** — The *chord of the major third*, *diminished fifth*, and *minor seventh* may be formed from the *dominant chord of the seventh* by *chromatically lowering* its *fifth*, or from the *chord of the seventh* on the seventh degree in *major* and second in *minor* by *chromatically raising* its *third*.

101.

*D or d: V<sub>7</sub>*      *B<sup>b</sup>: VII*  
*g: II*

The *double diminished chord of the seventh* may be formed from the *chord of the diminished seventh* by *chromatically lowering its third*; or from the *chord of the seventh* on the second degree of *major* by *chromatically raising its fundamental*.

102.

*d: VII<sup>07</sup>*    *eb: VII<sup>07</sup>*    *G: II<sup>7</sup>*    *E: II<sup>7</sup>*

### Resolution.

**Artificial, passing character.** — These *altered chords* have no clear key relationships, in spite of the efforts that theorists have made to trace or establish them. (See page 69.)

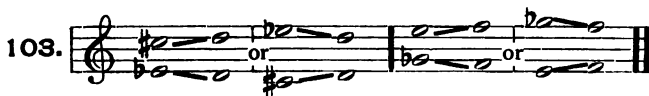
They are artificial links in the chain of natural harmonies, and they must be well chosen, skilfully introduced, and sparingly employed; or they will impart an artificial, fragmentary character to compositions.

**The conditions that regulate their resolution.** — As will have been seen in the numerous examples given in connection with the introduction of the several classes of these formations, the situations and the *chord elements* share the responsibility in directing the *resolutions*.

We usually take cognizance of the natural tendency of



raised *intervals* to resolve upward, and of lowered *intervals* to resolve downward : (See illustration 80.)

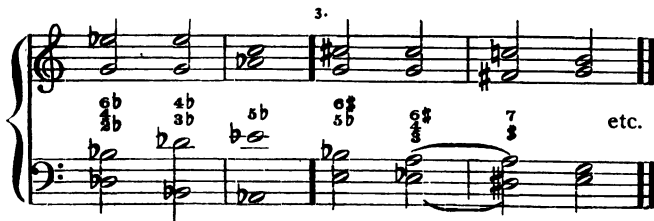


indeed, this tendency is seldom ignored, with good results ; unless the *altered chord* be sufficiently long sustained to allow its equivocal quality (lack of key affiliations) to assert itself.

This will in a measure neutralize the *passing chord* character, and reconcile the ear to novel forms of treatment.

**A Few Cases where the Tendency of Chord Elements is Ignored.**

104. 



### Exercises Introducing Altered Chords.

1.

2.

3.

4.

## CHAPTER XI.

### SUSPENSIONS.

**Definition of a suspension.** — When a voice is delayed taking its natural place in any given chord — holding over (during this period of delay) a tone from the previous harmony — this retained tone, if a dissonance, with, at least, one *interval* of the new chord, is called a *suspension*.

The character and the consequent treatment of the *suspension* and *seventh* are somewhat similar. Their usefulness arises from a well defined *tendency* toward the next lower degree. They both require preparation. Suspensions are most effective when markedly dissonant.

1. Good.    2. Not good.    3. Good.    4. Not good.

105.

The musical notation for exercise 105 consists of two staves, treble and bass. Above the staves, four measures are labeled: 1. Good, 2. Not good, 3. Good, 4. Not good. The first measure (Good) shows a treble staff with a chord of two sixths (F4, A4) and a bass staff with a chord of two sixths (C3, E3). The second measure (Not good) shows a treble staff with a chord of two sixths (F4, A4) and a bass staff with a chord of two sixths (C3, E3). The third measure (Good) shows a treble staff with a chord of two sixths (F4, A4) and a bass staff with a chord of two sixths (C3, E3). The fourth measure (Not good) shows a treble staff with a chord of two sixths (F4, A4) and a bass staff with a chord of two sixths (C3, E3). Below the bass staff, the figures 6, 9, 8, 6, 5, 4, 8, 6, 5 are written, corresponding to the notes in the bass staff.

**Comments.** — Of the above, 1 and 3 are sufficiently dissonant to indicate the succession; whereas 2 and 4 are entirely indefinite in their tendency.

**Markings.** — Writing *suspensions* would be a simple matter were it not for the fact, that in indicating them the figuring becomes involved.

Perfect familiarity with regular chord markings, will greatly facilitate the recognition and understanding of *suspension* figures.

The regular chord markings are  $\frac{8}{8}$  for the plain *triad*,  $\frac{8}{4}$  for the *chord of the sixth*,  $\frac{8}{4}$  for the *chord of the sixth and fourth*,  $\frac{7}{8}$  for the plain *chord of the seventh*, and  $\frac{7}{8}$ ,  $\frac{7}{4}$  for the *inversions* of the *chord of the seventh*.

Figurings which are in any degree foreign to these, indicate *suspensions*.

**NOTE.** Incomplete marking, where essentials only are given, is but a justifiable abridgment; i. e., we use  $\frac{4}{4}$  instead of  $\frac{8}{4}$ , 7 instead of  $\frac{7}{8}$ , 6 instead of  $\frac{6}{8}$  or  $\frac{6}{4}$ , etc. The figure 4 is used in three regular combinations; but is insufficient by itself to indicate any chord; therefore it is followed by 3 as a *suspension* marking.

**Markings continued.** — As a *suspension* to any one degree is from the next higher, it will always be indicated by a figure followed by its next lower; i. e., 9-8, 7-6, 6-5, 4-3, etc.

With the exception of 7-6, these markings are unequivocal. This one (7-6) could be interpreted in two ways—as a *chord of the seventh* followed by a *chord of the sixth*:



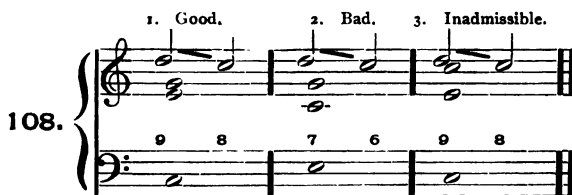
or, as a *chord of the sixth* with a *suspension* of the *seventh* to the *sixth*



This is the only arbitrary marking.

**Rule 1.**— The suspended tone can never be duplicated.

**Rule 2.**— The lowest voice is the only one to which the tone of *resolution* may be given (during the *suspension* itself); for it is the only voice having sufficient weight to clearly define the intention; and also because of its further removal from the suspended tone.



**Comments.** — At 1, C, the tone of *resolution*, is two octaves apart, and in the lowest voice.

At 2, it is but one octave removed, and is in a middle voice; and at 3, it is a duplicate of the tone itself.

**Rule 3.** — The *preparation* may be longer, but never shorter than the *suspension*.

**Rule 4.** — In dual rhythms, viz.,  $\frac{2}{4}$ ,  $\frac{4}{4}$ ,  $\frac{4}{2}$ , etc., the suspension itself must occur on a naturally accented part of the measure.



In comparatively slow movements, where the pulsations group themselves, and the second half of the *dual* measure becomes to a certain degree the rhythmical counterpart of the first, the secondary accent may have sufficient weight to endow a suspended tone with significance, thus :



In rapidly moving *triple* rhythms, viz.,  $\frac{3}{4}$ ,  $\frac{6}{4}$ ,  $\frac{9}{8}$ , etc., *suspensions* may be introduced at the beginning of each group.



In a slow movement a *suspension* may be given to the second "impulse" of a triplet group.

This will produce the effect of a syncopation.



**Rule 5.** — However or wherever *suspensions* are introduced, their *resolutions* must follow upon less important metrical points than those held by the *suspensions* themselves.

This will be found amply illustrated in the examples given.

Under favorable conditions, *suspensions* to each *interval* of the *triad* (when occurring either with or without the *seventh*) may be made practicable. We shall cite the one possible *suspension* to the *seventh*, but it is of doubtful value.

**Voices for suspension.** — *Suspensions* may be introduced in any of the four voices; but the *bass* is least adaptable. The *suspensions* to the *third* and to the *fifth* are the only ones that often appear in the *bass*.

We will now give a complete list of the forms in which the three practical *suspensions*, viz., to the *fundamental*, *third*, and *fifth*, may occur, using the major *triad* and the *dominant chord of the seventh* of C, exclusively.

The figurings, which are quite easy of comprehension when *suspensions* with plain *triads* are indicated, become more involved when we employ *inversions*, and add *sevenths*. (See page 78.)

**NOTE.** In the following case we have the various positions in which the voices may be placed during a *suspension*. It will not be necessary to give all of them in connection with those that follow. We shall therefore confine ourselves, in each case, to some special one which will suffice to show its characteristics.

#### Suspensions In the Uninverted Triad.

a. To the *fundamental* (marked 9 8).

113.

To the *third* (marked 4 3). To the *fifth* (marked 6 5).

114.

Not good.

**Comments.** — The last (to the *fifth*) is not sufficiently dissonant to have a well defined *tendency*. It becomes a legitimate *suspension* in the second *inversion* of the *triad*, and in two *inversions* of the *chord of the seventh*.

#### Suspensions in the Chord of the Sixth.

To the *fundamental* (marked 7 6).

115.

To the *third* (marked  $\frac{9}{8}$   $\frac{8}{7}$ ).

To the *fifth* (marked  $\frac{6}{4}$   $\frac{5}{3}$ ).

Not good.



## Suspensions in the Chord of the Sixth and Fourth.

To the fundamental.      To the third.      To the fifth.

116.

NOTE. Figures followed by dashes indicate essential *intervals* of the chords, and the dashes show that these essential tones are to be continued with the *resolution* of the *suspension*.

## Suspensions in the Uninverted Chord of the Seventh.

To the fundamental.      To the third.

117.

To the fifth.      To the seventh.

## Suspensions in the Inverted Chord of the Seventh.

NOTE. The old rule prohibiting omissions or duplications in *inversions* of chords of the seventh, holds good when *suspensions* are introduced. We cannot, therefore, suspend to the *bass* tone.

118. *To the fundamental.* *To the fifth.*

3d in bass.

*To the fundamental.* *To the third.*

5th in bass.

*To the fundamental.* *To the third.* *To the fifth.*

7th in bass.

### Suspensions in the Bass.

*To the third.* *To third with seventh.* *To fifth with seventh.*

120.

## Double Suspensions.

The *suspensions* to the *third* and *fifth*, or to the *fundamental* and *third*, often occur simultaneously, with good effect.

To the *fundamental* and *third*. To the *third* and *fifth*.

121.

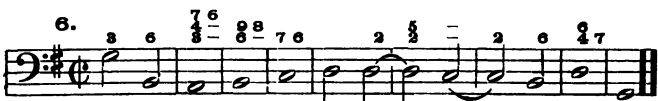
The value of suspensions measured by the distinctness of their tendency. — With few exceptions, the *suspensions* thus far cited are in practical use. They present many grades of *tendency* strength—their vital element. Their value is, based upon the definiteness of this *tendency*, which is the natural outcome of their dissonant character. (See pages 77 and 83.)

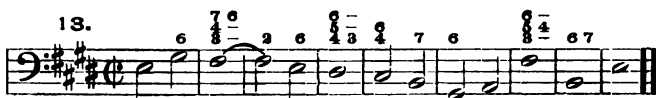
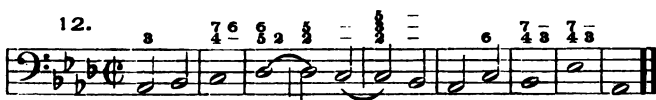
Exercises Introducing Suspensions to the Uninverted Triad, with and without the Seventh.

1.

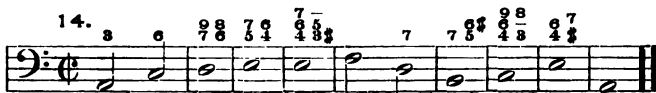


**Exercises Introducing Suspensions to Inverted Chords both Triads, and Chords of the Seventh.**





## Exercises Introducing Double Suspensions.



NOTE. — The student must not wholly judge of the practical value of dissonant or involved material from the effect it produces in exer-

cises overloaded in turn with each individual variety. Each set of exercises has its specific mission — the illustration of some phase of *chord-formation* or *succession* — and this mission can be fulfilled only within reasonable space, by utilizing theoretical opportunities with little regard to their esthetic fitness.

## No. 20 worked out.

122.

The musical score for exercise No. 20, worked out, is presented in two systems. The first system, labeled '1.', shows a treble staff with a double suspension and a bass staff with figures 5, 7, 9, 8, 7, 6, 4, 3. The second system, labeled '2.', shows a treble staff with two suspensions and a bass staff with figures 6, 4, 8, 9, 8, 6. The key signature is B-flat major (two flats) and the time signature is common time (C).

**Comments.** — 1. Of this double *suspension*, one tone is prepared by the *seventh* of the previous chord. This is not at all exceptional. Any *interval* of a chord may be retained as a *suspension*. The figuring itself in this example disposes of the three upper voices, leaving no question as to the tone material to be employed, nor as to the voices to which the figures themselves are to be assigned. The two *suspensions* (9, 8 and 4, 3) are prepared, and will naturally be resolved respectively in the *soprano* and *alto*. The *seventh* must be given to the *tenor*, and the dash after the 7 (–) signifies that that *interval* is to be continued (tied over) through the measure.

2. Here our two suspensions are indicated, as in the previous example, by 9, 8. They occur in the *alto* and

*tenor*. The marking (§) of the *resolution* is an abridgment of §, the full figuring of the *triad*. During the *suspension* itself, the *ninth* and *fourth* are substituted for the *fundamental* and *third*. The complete chord is, in this case (and many others), more easily traced in the figuring of the *resolution* than in that of the *suspension*. As the *fifth* (G) is an essential element of the *triad*, it must also appear with the *suspension*, to which it imparts fullness and a more direct *tendency*. Indeed, we could give no other *interval* of the chord to the *soprano* without breaking some fundamental rule.

3. This instance is exactly the same as 2. The octave skip in the *bass* is to be regarded the same as a sustained tone.

4. Here the figuring provides for each of the upper voices. The "*resolution* marking" is the full figuring of the *chord of the sixth and fourth*.

### Suspensions which do not Stop the Onward Movement of the Accompanying Voices.

Where, as in all examples thus far cited, the voices not actively involved, remain stationary through the duration and resolution of *suspensions*, the responsibility of securing harmonic change and "rhythmic stridency" devolves entirely upon the voice (or voices) concerned in the *suspension*. In slow movements this would sometimes produce stagnation, which may be avoided by the use of *progressive harmonies*, or merely a change of *bass*.

NOTE.—*Progressive* would in this connection be applied to harmonies following each other in regular rhythmic succession.

When *suspensions* occur with such *progressive har-*

monies; *preparation*, *suspension*, and *resolution* will require the use of three chords, and four or more are often introduced.

With three chords.

123.

NOTE.— In the above sequence the tone of *resolution* of each *suspension* is the *preparation* of the next following.

124.

NOTE.— As we increase the length of the *suspension*, the *preparation* must be made proportionately long. In the first of the above examples, the *preparation* is a dotted whole note, while the *suspension* itself is but two thirds as long. In the second, they are of equal duration.



With changing bass only.

125.

**Markings and rules.** — The marking 9, 4, etc., will readily be recognized as indicating foreign tones (*suspensions*), although they are not in these changing conditions followed by their next lower figures. Their *resolutions* will, however, be strictly according to rule, although into different chords from those in which the *suspensions* appear.

When the *suspension* itself be continued through a change of harmony, it must be quite as legitimate (dissonant) in the second as in the first chord. (See *a, b*, of illustration 124.)

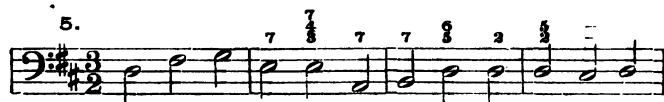
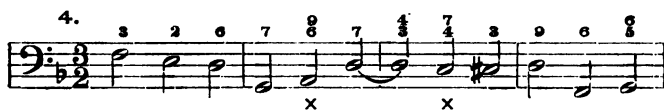
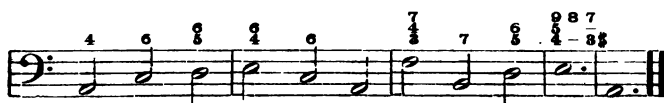
#### Exercises with Progressive Harmonies, etc.

1. 3 6 9 7  $\frac{7}{3}$   $\frac{6}{3}$  4 7  $\frac{7}{3}$   $\frac{6}{3}$  7  $\frac{4}{3}$  6  $\frac{9}{3}$  4 3

Open (or dispersed) position.

2. 3 6 9 7  $\frac{6}{3}$   $\frac{9}{7}$  7 9 7 9 7 9 7  $\frac{6}{3}$  7

3. 3 6 $\sharp$  6 9 6 7 4  $\frac{3\sharp}{3}$  6  $\frac{6\sharp}{4}$  6



8.  $\frac{8}{5} \frac{8}{5} 7 \frac{6}{5} \frac{9}{4} 6 \frac{6}{5} \frac{6}{4} \frac{8}{5} \frac{9}{4} 6$

Artificial accents in exercise 4, are marked thus: — X X X

No. 1 worked out.

126. 1. 2. 3. 4.

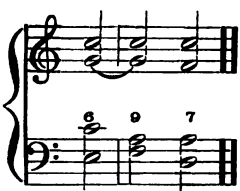

Open position.

5. 6.

Close position.

Comments on the foregoing worked out exercise. —

At 1, the soprano could have descended to C, which would have forced the succeeding *suspension* into the *alto*, and have resulted in one of the following positions of the upper voices :

127.  or 128. 

Musically, there is little choice. Each could be in turn best according to its environment.

The *suspension* at 2 is indicated by 9. The *resolution* (F) is not marked in the next figuring, for the chord changes; and as F is required to complete this new formation, it is sufficiently well indicated by 7, an abridgment of  $\frac{7}{8}$ , of which F is the *third*. (See page 92.)

At 3, the marking  $\frac{7}{8}$  is an unmistakable *suspension* figuring. The change of bass (from D to D $\flat$ ) results in the passing, or *altered chord*, which we defined as *chord of the major third, diminished fifth, and minor seventh*. In this instance, it issues from the *dominant chord of the seventh*, and resolves into its *tonic*. (See page 72.)

At 4, the F, which is indicated by the marking, must resolve to E, although the latter is forced by the *progressive harmonies* to appear as the *fifth* of the chord on A, instead of as the *third* of the bass note C, which caused the *tendency* of the soprano toward E to be felt.

5, is quite similar to 3 in treatment. The character of the *fundamental chord* is, however, different, inasmuch as the *third* is *minor* instead of *major*.

At 6, the *dominant chord of the seventh* continues throughout the measure. During such continuance the voices can be allowed comparative liberty of movement in inverting the *intervals* of the *chord*. The small notes could have been used, had they not involved a return to a much employed position — most noticeable in the *soprano*.

## CHAPTER XII.

## SUSPENSIONS FROM BELOW, ETC.

**Exceptional employment of dissonants.** — There are several forms of dissonance which, because of the manner of their introduction, of their resolution, or both, are more or less outside the pale of *school* harmonization.

The law of compensation entitles us to the use of all of them; but equity in these matters can be made apparent only through an assay of values; by placing the ends (or effects) attained through free treatment, over against those that would result from strict conformity to rule.

Their use is somewhat regulated by certain fundamental principles; still the justification of their employment must be based upon musical sense. This musical sense becomes more and more acute as our fund of knowledge by study and observation is increased. We respect the strict *forms*, and yet observe—in compositions of the great masters—illustrations of felicitous freedom.

The former are like narrow paths; the latter like boundless landscapes. The strict style implies purpose and tendency; and the presence of these attributes is essential to logical strength. We may diverge to the right or to the left, in seeking fancy's flowers; but must keep the beaten path always in sight. If such expeditions be too oft repeated we become aimless. These remarks apply equally to indulgence in *exceptional harmonizations*, and departures from prescribed *musical form*.

*Prepared suspensions from below, unprepared suspensions from above and below, elided resolutions of suspensions, intercepted resolutions, anticipations, and retardations, belong to the category of exceptional harmonizations.*

**Definition.** — *Prepared suspensions from below* usually result from the detention of *leading tones*,—or of tones whose upward tendency is equally strong—after the remaining voices have moved to their normal positions in the new chord.

**Rule.** — These *suspensions*, like those which resolve downward, must occur on accented metrical points; and their tones of resolution during the *suspensions* themselves must not appear in any other voice than the *bass*. (See pages 79 and 80.)

**Illustrations of Prepared Suspensions from Below.**

129.

**NOTE.** In the above example, each *suspension* will be found marked by a cross.

**Doubtful suspension.** — *Upward suspensions*, involving a whole step, are sometimes used; but they are characterless — the tone suspended having no pronounced *tendency*. *Unprepared suspensions*, (sometimes called *changing notes*), because of the intonation difficulties which they present, are better suited to instrumental than to vocal setting; still they may be sparingly employed by the voices.

**Rule 1.** — They are to be approached either by step, or by skip from the direction opposite to that of their *resolutions*; i. e., those having a downward tendency from below, and those having an upward tendency from above.

**Rule 2.** — They must occur on accented metrical points.

**Rule 3.** — Their tones of resolution can be in the lowest voice only — simultaneously with any discords of suspension. (See page 97.)

Illustration of Unprepared Suspensions.

130.

The illustration consists of two systems of musical notation, each with a grand staff (treble and bass clefs). The key signature is one flat (B-flat), and the time signature is common time (C). The first system contains six measures. The second system contains four measures. Various notes are marked with a '+' sign, indicating unprepared suspensions. The notation shows complex harmonic relationships between the voices, with some notes being sustained across measure boundaries.

**Comments.** — The above illustration contains various sorts of *unprepared suspensions*; viz., such as are taken

by step, such as are taken by skip, and such as occur simultaneously in two and three voices.

**Definition.** — *Intercepted resolutions* arise when tones that are either *intervals* of the prevailing harmonies, or are foreign to the same, are introduced between the *suspension* and its *resolution*.

#### Intercepted Resolutions.

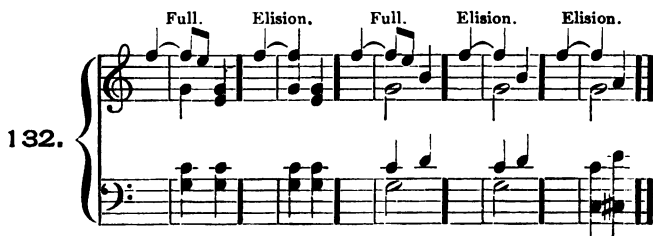


#### Elided Resolutions.

**Definition.** — For the sake of conciseness, the tone of *resolution* is sometimes implied only, but this expedient is fraught with danger.

Young composers, especially, are apt to err in seeking sudden transitions: apparently regarding the plains of level thought and adequate amplification as somewhat commonplace, they pursue abrupt courses, which the musical sense is unable to follow.

The proper musical situation can legitimize *elided resolutions*, as well as other exceptions to natural laws.





**Definitions.** — *Anticipations and retardations* are purely rhythmical in character; and, consequently, make a desirable effect only when several occur in immediate succession.

The former consist in a voice or voices taking a tone or tones of the succeeding chord before its entry.

The opposite is the case in *retardation*, and it is usually confined to one voice. This is not, however, imperative, as will be seen in the following examples:

Illustrations of Anticipations.

133.

In the bass.

This musical example shows a piano accompaniment with two staves. The bass staff contains several notes that enter before the corresponding notes in the treble staff, illustrating the concept of anticipation in the bass.

134.

In the soprano.

This musical example shows a piano accompaniment with two staves. The soprano staff (treble clef) contains several notes that enter before the corresponding notes in the bass staff, illustrating the concept of anticipation in the soprano.

135.

In three voices.

This musical example shows a piano accompaniment with two staves. The treble staff contains three distinct voices, each with notes that enter before the corresponding notes in the bass staff, illustrating the concept of anticipation in three voices.



**Ritardations in Four Voiced Writing and in Unisons.**



## CHAPTER XIII.

### THE C CLEF, ETC.

The C clef is a relic which, because of association, deserves respect; but it has little practical value for the composer, and will doubtless soon drop into disuse.

Any device that complicates musical notation should be avoided by rational men.

\* In cadence forms, one tone may be anticipated, and a different one struck with the entrance of the chord.

It is claimed that by its use we avoid ledger lines. This may be in some cases true, but there is no comparison between the difficulty engendered by an additional ledger line and those that arise from sliding our alphabet up and down the *staff*.

The science of music is so abstruse, that we can ill afford to cloud our insight with the dust of raked up traditions.

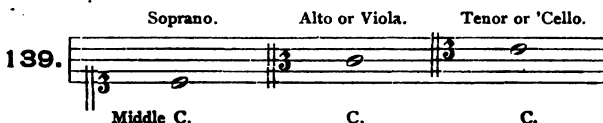
The C clef has assumed various forms, viz.,



but the first is oftenest met with.

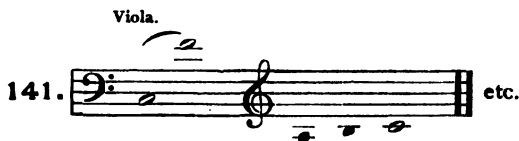
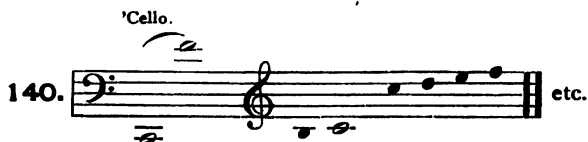
It indicates the location of middle C — that letter being upon whatever line the clef is placed.

When used for the *soprano*, it is placed on the first line; when for the *alto* voice or *viola*, on the third line, and when for the *tenor* voice or '*cello*', on the fourth line.



Many old vocal scores employ this clef, and — more as a concession to custom than because of advantages gained — the lowest register of the *viola* and the middle register of the '*cello*' are still written on it.

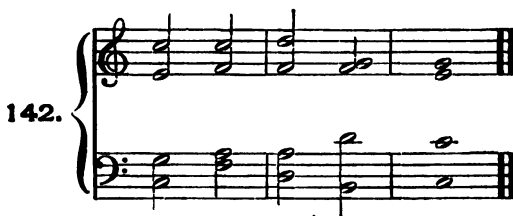
NOTE. As long as the highest tones for these instruments require the G (violin) clef, it would seem much more practical to use but two in writing their parts; viz., the familiar F (bass) and G (violin), and their range could be covered without oft recurring changes.



Under existing conditions, the musician must become familiar with the use of the C clef; but this necessary knowledge may be quite as quickly, and quite as well, acquired by reading, as by writing.

Orchestral scores furnish some practice in reading the C clef, but the best is to be found in old *a capella* choral works.

The following chord succession



would appear as below, if the C clef were used for the upper voices.

143.

SOPRANO.

ALTO.

TENOR.

BASS.

## CHAPTER XIV. .

## CADENCES.

**Definition.**— This name is assigned to such successions of two *chords* each, as will serve to bring a piece, a *period*, a *phrase*, or a group of harmonies to a satisfactory close (adequate to the situation).

**Characteristics.**— The two chords immediately concerned in a *cadence*, may have one tone in common, or none. The use of chords having two similar tones is not, except in rare cases, sufficiently progressive to impart conclusiveness.

Two tones similar.                      One tone similar.

145.

The musical notation for exercise 145 consists of two staves, treble and bass clef. The first section, labeled 'Two tones similar', shows two chords: a C major chord (C4, E4, G4) and an E major chord (E4, G4, B4). The second section, labeled 'One tone similar', shows two chords: a C major chord (C4, E4, G4) and a C minor chord (C4, E♭4, G4). The exercise is numbered 145.

We have *perfect authentic* cadences, *imperfect authentic* cadences, *half* cadences, *deceptive* cadences, and *plagal* cadences.

The first named is formed when the *dominant* is followed by the *tonic* chord, the *fundamental* of each being in the *bass*, and the *fundamental* of the *tonic* in the *soprano*.



In *deceptive cadences*, the *dominant* chord resolves into some other *chord* than the *tonic*.

### Deceptive Cadences.

149.

NOTE. Several of the above *cadences* involve *modulations*.

*Plagal cadences* are primarily formed by the *tonic* preceded by the *subdominant*, but the *third* below is often added to this latter chord — producing the *chord of the seventh* of the second degree.

150.

Of these *cadences* the *perfect authentic* is final in its character, and is adapted to bringing a composition to a full close. It is in most cases either introduced through the second *inversion* of the *tonic*, or is preceded by the *plagal cadence*.

151.



*Imperfect authentic* are often used instead of *perfect cadences*, but seldom with desirable results.

The *half*, *deceptive*, and *plagal cadences* are essentially intermediate, or incidental, in their character.

They are employed to round off musical phrases, and to logically prepare the sense for their successors.

Variety, form, relationships, and musical flow, are the factors that influence the composer in his choice of *cadences*.

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## CHAPTER XV.

### WHAT IS MODULATION?

It would be impossible to do justice to the means and methods of *modulation*, in the space appropriated for it in this concise work.

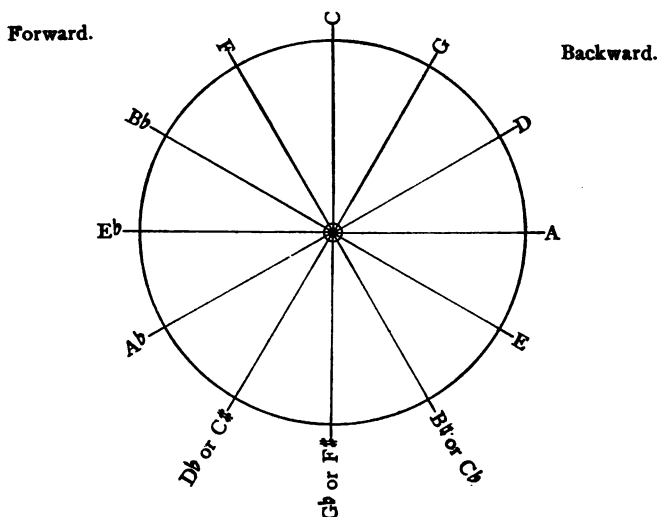
Numerous books giving *exhaustive formulæ*, are extant.

It shall be my task to define *modulation*, show how existing *key* digressions may be traced, and to point out a few of the principles that underlie this art.

The "realm of tones" is like the firmament, each field of vision being analagous to a *key*. As we turn to bring new stars into view, we lose more and more of the old, until having completed a half circle, we necessarily find a field totally foreign to the original.

Starting with C major, — if we follow the musical *circle of fifths*, backward or forward — we drop one of its tones with each remove, substituting therefor a new element.

## The Circle of Fifths.



Each step necessitates a readjustment of the relationship of the retained material. We have a changed *key*, or constellation, with each new musical star which is brought into the field. We move from point to point of the musical horizon, turning upon the natural laws of relationship as our *axis*; the motive, means, and objective points being suggested by the aesthetic needs of our schemes.

Our musical sense can comprehend but one *key* at a time. *Modulation* is the art of crossing the boundaries, of passing from any one *key* into another — nearly or remotely related.

**Two classes.** — There are two general classes of *modulation*; viz., *incidental* and *established*.

**Incidental modulation.** — The first named are such as occur during the progress of thematic development. They impart a dash of contrasting color, but should never be obtrusive.

The too free use of *incidental modulations* will result in inquietude. True strength manifests itself in reposeful forms.

**Incidental Modulations.**

152.

$E^b : I c : III \quad VI \quad II E^b : I d : VII VI g : III VI c : III$

$I f : VII I - c : III - I B^b : V I \quad V I c : VII$

$I - III \quad VI IV g : VII E^b : I \quad V \quad I$

NOTE. — The above illustration is purely *technical*; and by no means a practical model. In such examples, I attempt to show in various lights whatever specialty is under consideration, which is usually incompatible with a pure musical scheme.

**Defining the new key.** — A foreign tone brings about a modulation, but it often requires two or more *chords* to define a new *key*; for the *chords of the diminished seventh* and the *augmented triads* are the only ones that have not several affiliations. Even the *dominant chord of the seventh* is ambiguous, for it belongs to two *keys* — to a *major* and to its *parallel minor*.

**Comments on the above example.** — 1. B natural introduces c *minor*, which continues until the reappearance of B *flat* in the third measure. The E *flat* in the *bass* is an *organ point*, and the harmonies are to be reckoned quite independently of it.

2. This *chord of the diminished seventh* can be in but one *key* — d *minor*.

3. F *sharp* and B *flat* occur together in g *minor* only.

4. B *natural* again leads us to c *minor*, which rules until the occurrence of 5, the *chord of the diminished seventh* on E, which is unequivocally f *minor*.

6. Here we have again the *augmented triad* on the third degree of c *minor*.

7. This *dominant chord of the seventh* is only decisive when taken in conjunction with its resolution, for it might, with almost equal propriety, have led into b *flat minor*.

8. The *chord of the diminished seventh* on B *natural* — the seventh degree of c *minor* — is unequivocal; and 9, that on F *sharp* is equally so, in spite of the unprepared *suspension* — D.

NOTE. — The student should practise tracing *modulations* — taking four-part vocal works as material. The prevailing *keys* should be indicated through capital letters if *major*, and small letters if *minor*. As above, the numerals mark the relations of the *fundamentals* to the several *keys*.

**Established modulations.** — *Established modulations* are such as lead our musical sense to, and establish it in, new environments.

They are employed by composers to connect the integral parts of their compositions—to impart purposeful unity to divergent ideas.

In the *sonata form*, for instance, if the first *theme* (the *motive*) were in C *major*, the second (the *melodic*) would be in G, A *flat*, or E. The transition from C *major* to the desired key would be a *modulation*—mechanical or artistic in proportion to the skill with which the technical means were made subservient to musical feeling and purpose.

As before stated, a *modulation* begins with the introduction of a tone — having harmonic significance — which is foreign to the scale of the *key* that had prevailed up to the time of its entrance.

Established Modulation—C to G.

153.

The musical score is presented in two systems. The first system, labeled '153.', shows a grand staff with a treble and bass clef. The key signature is one sharp (F#), indicating G major. The music consists of several measures with chords and melodic lines. The second system continues the piece, showing a modulation from C major to G major. The key signature changes to one sharp (F#), and the music continues with similar harmonic and melodic structures. The score is labeled 'C' at the beginning of the first system, indicating the starting key.

1. 2. 3. 4. 5.

a d a ( $d\sharp$  is a passing tone.) e -

6. 7.

- - D G - - - -

**Comments on the above example.** — In the above illustration, the first four measures are devoted to establishing *C major* — the starting point. The entrance of the *a minor* chord does not at first induce a feeling of departure; but its long continuance does have that effect.

1. The *E major triad* is the first decisive step. This takes us out of *C major* — to which we do not return — and substitutes *a minor*, for the moment, in its place.

2. This *dominant chord of the seventh* is itself in *d minor*, because it resolves into that chord.

3. *B natural* in the *bass* leads us out of *d minor*, and back into *a minor*. (*B flat* is essential to *d minor*.)

4. This is an *augmented chord of the sixth, fourth, and third*, which, as a *passing* (or *altered*) formation, has no direct *key* affiliations.

5. As *e minor* follows this *dominant*, it is itself in *e minor*.

6. G, B, F sharp, and C sharp occur together in the D major scale only.

7. The *chord of the sixth and fourth*, and the *organ point* which follows upon D form an example of the most satisfactory method of introducing an objective *key*.

**Comparison of incidental and established examples.—**

In contrasting the two illustrations given — of *incidental* and of *established modulations*, we find that in the first named, the original *key* is kept constantly before us, by its own recurrence, or by the use of intimately related *keys*,—the *relative minor* or *dominant*: whereas, the second moves on without glancing backward, leaving the musical sense in uncertainty until it reaches its goal — the *chord of the sixth and fourth* on D.

**A FEW HINTS AS TO MEANS AND MODES.**

**Modes.**

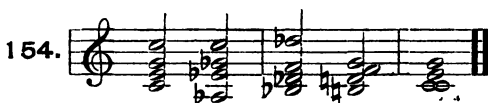
**The chord of the sixth and fourth.**—In the first place, the most satisfactory and the most easily attained “lodgment” in any desired *key*, is to be found in the *chord of the sixth and fourth* of its *tonic*.

This *chord* may be either immediately followed by its *dominant*, or an *organ point* on its *bass* tone may be interposed, as in Ex. 153. The latter course creates anticipation, and, therefore, makes the succeeding *authentic cadence* (*dominant*, — *tonic*) more decisive. No *key* can be established without the use of this *cadence*.

**Logical sequence.**—*Incidental modulations* may be made through abrupt progressions, often involving the use of but a single *chord*, as was shown in Ex. 152; but a rad-

ical departure or digression from the prevailing to a new objective *key* (which is at all remote) can only be accomplished by well considered stages.

In the following illustration, the *dominant* of *D flat* makes no impression of stability. We feel while hearing it that *C major* will return :



whereas, when smoothly approached, it distinctly announces *D flat*.



As *incidental modulations* have fugitive import only, we shall give them no further consideration. Our modes and means will be suggested by, and be applicable to, purposeful changes of *key*.

**Our axis.** — Before proceeding I must revert to a principle which was announced at the beginning of this chapter ; viz., that we adopt the natural laws of relationship as our axis.

**Relationships.** — What is relationship ? This question was answered in a general way in Chapter III., in which is asserted that *chords* containing a similar tone or tones are related ; but our present purpose requires that we shall scan and classify tones and combinations of tones much more closely than was necessary at that early stage.

**The perfect fifth.** — We will begin with the highest grade—that of the perfect *fifth* above. This relationship is self-evident when tones only are under considera-



tion, for each is a strong contributive element (*harmonic*) in its next lower tone (G—C, C—F, etc.), and it will require but little research to prove that this relationship asserts itself with equal force when these tones are made the *fundamentals of chords or keys*.

Moving Forward Over the Circle of Fifths.

156.

G C — F — B<sup>b</sup> — E<sup>b</sup> — A<sup>b</sup> —

With the *fifth* below the relations are reversed, and progress backward over the *circle of fifths* is like forcing a current up stream.

Backward.

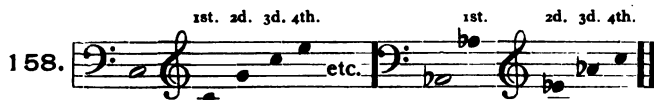
157.

G D — A — E — B —

NOTE. — These illustrations in their entirety should not be looked upon as examples of model successions, but each individual *modulation* should be regarded by and for itself.

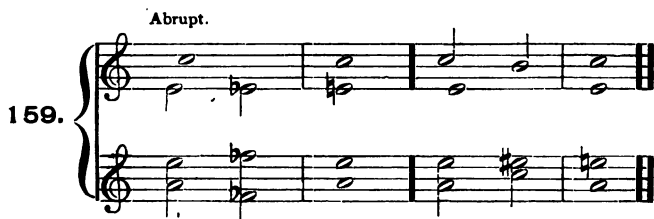
Were we to employ either of these prolonged courses through the *circle of fifths* in practical composition, it would be necessary to smooth its outlines and disguise its purpose under a musical garb.

**Major thirds.** — The *major keys* on the *major thirds* above and below compose the second grade of relationship. The *fifth* is the second, and the *third* the fourth harmonic :



and, as will be seen in the above example, this instant is similar to that of the *fifths* above and below ; viz., that the relationship C—E is but reversed in Ab—C.

The kinship of these *intervals* is sufficiently close to reconcile the ear to the abrupt entrance of the *tonic chords* of which they are the *fundamentals*.

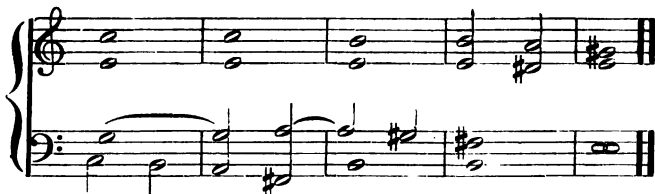


The following are the same transitions by stages, and established.

**Modulation to the Third Below.**



To the Third Above.



**Minor keys.** — The *parallel minor* of any *major key* is the latter's self in another mood, for it has the same *tonic, dominant, and subdominant fundamentals*; and the *relative minor* is its auxiliary, forming its complement in harmonic color.


From this it will be seen that each *minor key* plays a double role — *c minor* is the *parallel* of *C major*, and the auxiliary of *E flat major*.

NOTE. — These peculiar conditions furnish an easy, safe, and not too much used mode.

**Axis, tendency, and goal.** — The natural relationship of these *keys* (the *fifths* above and below, the *thirds* above and below, and the *minors*) to any given point of departure is our axis; the *tonic* of the desired *key* is our goal; and each successive step in that direction both develops new harmonic material and creates *tendency*.

Tendency is our motive power.

### Means.

Each *major, minor, or diminished triad* belongs to several *keys*; i.e., 161.  is the *tonic* of *C*

*major*, the *dominant* of both *F major* and *f minor*, the *subdominant* of *G major*, and is found in the sixth degree of *e minor*.

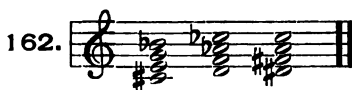
**Ambiguous character of the diminished seventh. —**

The *chord of the diminished seventh* is quite cosmopolitan, for its apparently definite affiliations are not deep-rooted. Notation may endow it—for the eye—and surroundings—for the ear—with *tendency*, but this tendency may be disregarded without violence to our musical sense.

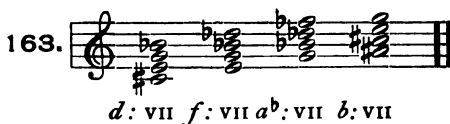
This cosmopolitan character makes it the most plastic chord which the composer has at his disposal. It is, therefore, very much over-used, and the ambitious student will do well if he seek other and less common means.

**Classification of these formations. —** There are twelve *chords of the diminished seventh* (one on each tone of the *chromatic scale*), but we find that they may be divided into three groups of four each, and that the *chords* in any resulting group differ in notation only; at least, when produced by *tempered* instruments, which do not distinguish, for instance, between A *sharp* and B *flat*.

Each of the following *chords* may therefore appear in four distinct forms, and have four distinct natural *resolutions*, besides many that are exceptional.



**Various forms of writing each. —** An exhibit of the first of these in its four forms, and with some of its *resolutions*, will be found below.



## Natural Resolutions.

164.

*d*: VII I *f*: VII I *a* $\flat$ : VII I *b*: VII I

## The same with Interposed Dominant Sevenths.

165.

NOTE. The above resolutions can be made to the parallel *major* keys, with almost equal propriety — D major, F major, etc.

## Irregular Resolutions.

166.

*g* minor. G major.

*e* minor. . . . .

167.

E major. . . . .

## Some Abrupt Transitions.

168.

b minor.                      C major.                      Bb major.                      etc.

This list might be very much extended, but the *resolutions* cited will serve to illustrate the character of these *chords*, and also contain suggestions of further possibilities.

## Résumé.

In reviewing the situation, we find that the higher relationship which prescribes *forms* and modes is based upon the kinship of *chord* and *key-fundamentals*.

In outlining a *modulation*, we choose such intermediate *keys* as incline toward the desired point of rest, the means being furnished in turn by each successive *key*.

**Formulæ.**— If, starting from C *major*, we wish to go to B *flat major*, our course may lead us through F *major* (the most natural path, for it follows the *circle of fifths* forward):

From C to B $\flat$  through F.

169.

F. d. g.

B $\flat$  Organ point.

or it may lead through the *parallel minor* :From C to B $\flat$  through C Minor.

170.

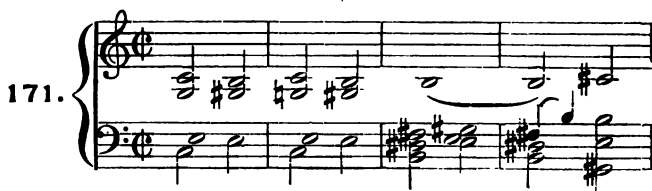
Parallel minor.

G minor.



In making a *modulation* to a remote *key*, the *third* above or below can be rendered effective, and they (as means) may be taken quite without preparation; in which case, a certain amount of reiteration will be requisite, to establish their character as intermediate *keys*. (See following Example.)

C to B through E.







The student should now be capable of analyzing music as it comes under his eye. He should never read a composition without tracing its *modulations, incidental* and *established*, and in case of the latter class, he should make himself cognizant of modes and means.

In practising modulation, he should at first confine his attention to technical essentials.

The last given example would, if treated in this way, appear as follows :

172.

1 2 3 4 5 6 7 8

The filling out and smoothing of outlines is a comparatively easy matter for musicians of good taste and inventive talent.

## CHAPTER XVI.

## SUSTAINED TONE — ORGAN POINT, ETC.

**Definition.** — When a tone is continued by some one voice, regardless of harmonic changes — the other voices progressing in a measure independent of it, we call the sustained tone, if in the *bass*, an *organ point*; if in one of the upper parts, a *stationary voice*.

**Rules.** — The same rules regulate their use, in whatever voice they occur, viz. :

*a.* The *stationary voice* or *organ point* must enter and close with a chord of which the *sustained tone* is an *interval*;

*b.* They should begin upon an accented metrical division;

*c.* Not more than two foreign chords should occur in succession. The sustained tone often forms (with the moving parts) unique, indeed at times assertively dissonant combinations; but these should always make the impression of transitory departures from pure harmonic relationship, and lead the ear to expect a return to it.

In order that this anticipation of return to consonance shall remain clear, it will be found wise to remain well within the bounds marked by rule *c*.

**Adaptable tones.** — The *fundamentals* of the *tonic* and *dominant* of the prevailing key (not necessarily of the key in which the piece is written) are best adapted to use as *sustained tones*.

They are the most important tones of each key — those of all others possessed of the power of preserving their significance through successions of alternating *consonants* and *dissonants*.

*Sustained tones* in the upper voices require (because of their greater self assertion) more careful treatment than *organ points*.

**When most often used.** — The latter are sometimes found at the beginning of compositions, but they are more common at the end of *parts*. They are well adapted for use in final *closing forms*, which they serve to broaden and emphasize. *Organ points* can be made powerful agents in the development of climaxes, because, as they are continued, and as the thematic working grows more and more intense, anticipation becomes sharper with each successive step — anticipation of that fruition which we feel must come with its release.

173.

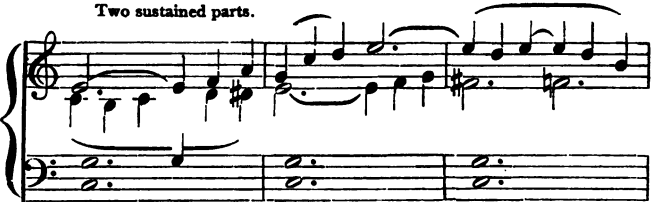
In the Bass.

Soprano.

Middle voice.



Two sustained parts.



Under certain harmonic conditions the *tonic* and *dominant* may be simultaneously sustained, as above.

## CHAPTER XVII.

TWO, THREE, FIVE, SIX, AND EIGHT VOICES IN  
COMPOSITION.

## Two-Voiced Writing.

**The character and disadvantage of two-voiced writing.**—Two unaccompanied voices afford but meager opportunities for successful invention. They may be so elaborated as to, in a degree, disguise their poverty, but plain half-note progressions (such as we have used in our four-part work) bring their helplessness into clear view.

Theorists advocate writing for two voices, as offering exceptional discipline. Their claim is well founded if the subject be viewed from the standpoint of difficulties presented, but there is another and a higher point of view — from the musical possibilities.

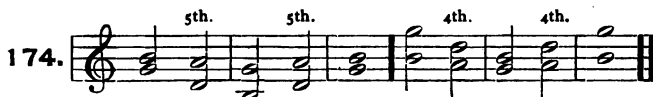
We study the science of music, not only in order to become familiar with material and methods, but still more to cultivate our discrimination.

If unmelodic successions or weak combinations have any weight, it is certainly on the wrong side of the balance.

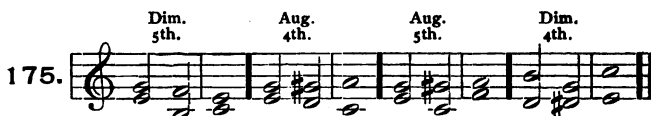
There would be more propriety in the popular habit of prescribing two-part work, were it postponed until the student had acquired a fund of contrapuntal knowledge. He could then clothe it in figuration, which would impart grace to its lines.

**Tone combinations.** — The task that in two-part writing so monopolizes attention as to in a great measure shut out all other considerations, is to provide such tones for the voices as shall have harmonic significance.

**Permissible relations.** — Perfect *fifths* and *fourths* can be written in so called *horn passages* or *forms*.



*Diminished* and *augmented fourths* and *fifths* can be used on unaccented metrical points.



*Unison* or the *octave* may be used at the beginning or close, but only as a last resort during the progress of a piece. When used, they may be succeeded by that bare *fourth* or *fifth*, which would furnish a complement to this incompleteness.



In the above examples, B is felt as *seventh*, and E as *third* of the chord on C.

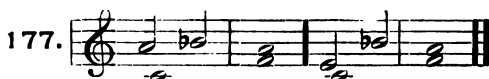
The remaining *interval-material* is *thirds*, *sixths*, and *sevenths*. The two first are our wheel-horses, but parallel progressions in either, if at all extended, destroy harmonic import.

In two-voiced writing, *secondary sevenths* must be carefully manipulated; viz., *a*, they must be prepared, or *b*, be taken by downward step with a held or implied *fundamental*. (See Ex. 175.)

The *dominant seventh* may be handled with greater freedom.

*a*. It may be taken by upward step, or

*b*. By upward skip, the *fundamental* being in each case prepared.



The *diminished seventh* must be diverted from its natural tendency (to a bare *fifth*), in order to fit it for two-voiced use. This can be done by delaying one of its *intervals*.



*Suspensions* can be made effective, but their field is small. What was said in Chapter XI. with regard to dissonance being the vital element of *suspensions*, is felt with full force here. We are, therefore, obliged to confine ourselves to such as possess this quality:



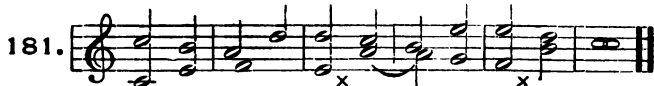
1. Is fully satisfactory.
2. Lacks significance.
3. Is not dissonant.



The above and its *inversion* are most employed.

As will be seen from these examples, the only effective *suspensions* are those leading to *fundamentals*.

**Example of Two-Voiced Writing.**



**Tritones.** — x x The sequential movement of the voices in these three measures justifies the skip F — B (the tritone) in the lower voice. These tones bear the relation to each other of an *augmented fourth*, which is, however, in this case comparatively harmless, and easily sung, because both occur in the natural scale—without pitch-disturbing *accidentals*.

*Three-voiced writing* is thoroughly practical, and the student will need but few suggestions in order to enable him to use it with good results.

The same rules obtain that governed four-voiced work.

**Omissions, etc.** — The absence of the fourth part will somewhat change the character, and very greatly increase the frequency of omissions.

Naturally the *thirds* of *triads* will never be omitted, but *chords of the seventh* will sometimes appear without that *interval*.



The *fifth* is usually the *interval* to be omitted.



*Five, six, or eight-voiced writing* obliges us to resort to manifold duplications, and the task is, therefore, quite the opposite to what was presented by two voices.

In one case, the difficulties arise from limited modes of expression, and in the other from an over plus of modes as compared with the harmonic elements.

Whether we write for an additional *soprano, alto, tenor, or bass*, or for two of each (eight-voiced), the three-toned *triad* and the four-toned *chord of the seventh* have to suffice as material.

NOTE. — The exception to this condition furnished by *passing tones* in *contrapuntal* figuration are not to be considered here.

To secure euphony, and at the same time to impart significance to each voice, will require much care and experience.

When two distinct choirs are simultaneously employed, they usually differ more in rhythm than in voice-leading:

Example of Eight-Voiced Writing.

TWO SOPRANI.

TWO ALTI.

TWO TENORI.

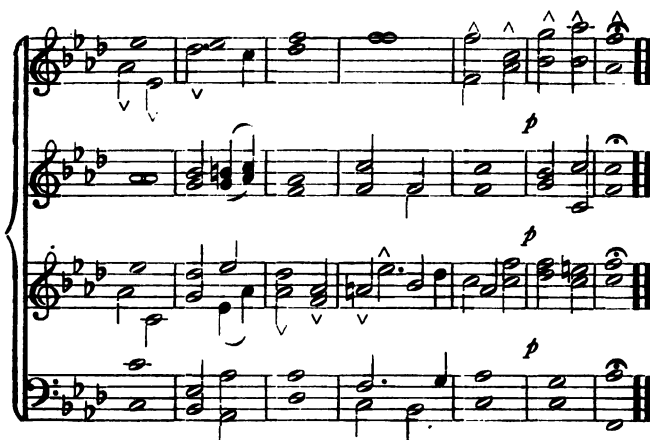
TWO BASSI.

183.

The musical score is for eight voices, arranged in four staves. Each staff represents two voices of the same part: Two Sopranos (top staff, treble clef), Two Altos (second staff, treble clef), Two Tenors (third staff, treble clef), and Two Basses (bottom staff, bass clef). The key signature has one sharp (F#), and the time signature is 4/4. The music consists of a single melodic line for each voice part, with various dynamics (p, pp) and articulation marks (slurs, accents, and a 'v' mark at the end of the bass staff). The number 183 is written to the left of the staves.

First system of a musical score for piano, consisting of four staves. The key signature is three flats (B-flat, E-flat, A-flat). The first staff is a treble clef with a melodic line. The second and third staves are treble clefs with harmonic accompaniment. The fourth staff is a bass clef with a bass line. The music features various note values, including eighth and sixteenth notes, and rests. A dynamic marking of *p* (piano) is present on the first staff. There are also slurs and accents throughout the system.

Second system of the musical score, continuing from the first system. It also consists of four staves in the same key signature. The notation continues with similar melodic and harmonic patterns. A dynamic marking of *p* is visible on the second staff. The system concludes with a double bar line.



## CHAPTER XVIII.

### THE PRACTICAL APPLICATION OF MATERIAL AND MODES.

Thus far the student has had figures to guide him, and his work has been purely mechanical.

At this point his invention and musical sense begin their offices.

We, to be sure, still employ *canti firmi*, but substitute German *chorals* for the musically unmeaning fragments which have thus far served our purpose.

German *chorals* are not sensuous melodies, but they are dignified, consequent, and suggestive.

There are two somewhat familiar subjects which the student will now be obliged to carefully consider.

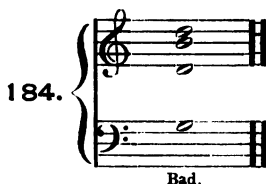
They are, the use of *chords of the sixth and fourth*, and *voice-leading*.

As the individual judgment will hereafter assume the direction, I shall, as far as possible, remove stumbling blocks, by the exhibition of the peculiar qualities and tendencies of our accumulated material and methods in a new light — in the light of adaptability.

### The Chord of the Sixth and Fourth.

There is nothing in *theory* less variable than the forms in which *chords of the sixth and fourth* must be written; still, they are omnipresent stumbling blocks to inexperience when original or even semi-original writing is attempted.

The *fifth* of the *triad*, which, because of the physical relations to its *fundamental*, will ill endure the accentuation resulting from doubling, in an uninverted chord,



*can* be doubled in the first *inversion*, and *must* be in the second *inversion* of the same; for as the *bass* moves upward over the *third* to the *fifth*, the latter's dependent nature passes away, and is replaced by pivotal tendency.



This tendency is not much felt when the *chord of the sixth and fourth* occurs in passing. (See next example.)

We are obliged to duplicate the *fifth*, in order to endow it with the measure of assertive firmness requisite to a *bass* tone, for the *bass* (or lowest voice) is the foundation of our musical structure.

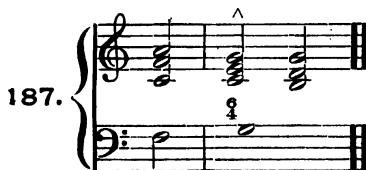
If the student make himself thoroughly conversant with the following rules and attendant illustrations, the *chord of the sixth and fourth* should cease to be an element of danger in his musical vocabulary.

### Taken by Step.

They may be used and left, the *bass* moving by *step*.



When used as in the above example, the *bass* tone may be retained as *fundamental* of the succeeding *chord* (cadence form), in which case the *chord of the sixth and fourth* must come on an accented metrical point.



## By Skip.

They may occur during, or at the close of an *arpeggio* movement of the bass, involving no change of harmony.

188.

During.                      At the close.

The positions of the upper voices may be changed during such progression of the *bass*.

189.

They may result from *skips* in the *bass*, but must in such instances occur on an accent, and be followed by the *cadence form*:

190.

The one justifiable exception to the above rule is found when the *chord of the sixth and fourth* results from a change of *bass* only.



### Resumé.

*We can approach and leave the chord of the sixth and fourth by step;*

*We can take it by step, and retain the bass tone;*

*We can approach and leave it by an arpeggio progression, when there is no change of harmony;*

*We can take it by a skip in the bass, but it must in such cases be resolved, and, if it involve a change of harmony, it must occur on an accent.*

Having emphasized the allowable modes of introducing this *chord*, I will give a few of those which should be avoided.

We cannot take it during an *arpeggio* progression of the *bass* with change of harmony :



for it leads to incoherency.

We cannot leave it by a skip in the *bass*, except in an *arpeggio* progression of that voice.



If taken by skip, — involving a change of harmony, — on an unaccented metrical point, the *bass* will not have sufficient weight to impart significance and *tendency*.



**NOTE.** Those who realize the vital import of this subject matter will pardon my redundancy.

### Voice Leading.

One of the ambitions of the earnest composer should be to endow each part or voice for which he writes with a melodic flow, which shall have significance for the performer to whom it is assigned, and shall through this significance enlist his best endeavors, without which adequate performances are scarcely attainable.

Many well conceived compositions, the outlines of which are strong, fail in their appeals to the ear, because of unskilful *voice-leading* — either unnatural, or not imbued with a prevailing spirit of song.



A true composition should be a sustained *many-voiced melody*. The day for strictly monophonic writing is past. Nowadays, even the Italians are wont to place counter-melodies over against their song.

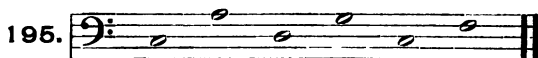
The highest and lowest voices are most vital, for the one marks the melodic outline, while the other furnishes the foundation while creating harmonic tendency.

The inner voices should be contributively melodious; viz., should intensify and not detract from the effectiveness of the leading parts, and should, where natural, endorse and emphasize their progressions by imitation.

So much in a general way: I will now take up some of the more important details of *voice-leading*.

### Good Modes.

a. *Diatonic* progressions are more melodic than *skips*; indeed, a part composed entirely of the latter would have, at best, only harmonic import. This should be especially borne in mind when *bass* outlines are under consideration.



Situations often arise that demand bold, forceful progressions, like the above, but they should be made exceptional.

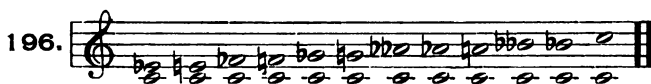
b. A sustained (or repeated) tone is not necessarily unmelodic or monotonous. This was amply illustrated in the chapter on *organ point*, etc. In such case, the greater freedom in the movement of the remaining voices affords full compensation for the passive character of the special one.

c. Skips, although not so purely melodic as *diatonic progressions*, are essential elements of song.

Characteristic rhythms and interspersed skips are the distinguishing features of melody. They endow it with individuality.

As the *scale* is the purest form of melody, so *skips* are less and less melodic as they increase in size: still we employ each and all of such as can be easily sung, when our musical schemes demand them.

All *perfect*, *minor*, and *diminished intervals*, and the *majors* (with the one exception of the *seventh*) are practical.



We do not go beyond the *octave* for voices, but instrumental *skips* need not be bound by such limitation.

d. Two and even three parts may skip simultaneously, but in such cases one voice must furnish a basis of stability and repose.



In adjusting the relations of the other voices to it, an *octave skip* is to be treated like a sustained tone.



*Octaves in contrary motion are permissible in cadence forms.*

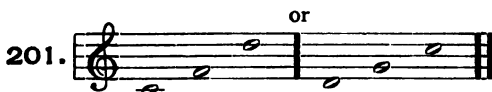


*e.* Later on, in *thematic polyphony*, the parts are sometimes crossed; but such latitude will not be needed in strict harmonization, nor even in contrapuntal exercises.



## Bad Modes.

a. Two successive *skips* by a voice in the same direction — both of which are larger than a *major third*:



The objection to the above voice-leading is based upon a physical condition; viz., after a long jump, we can more easily gather force for a return toward the original starting point than for a second jump away from it.

b. The *skip* of the *major seventh*, or of any *augmented interval*, is practically unsingable, and should be scrupulously avoided.

c. *Unharmonic cross relation*. This arises when a degree of the scale which has been sung by some voice in the previous *chord*, appears in another part (immediately following) in modified form.



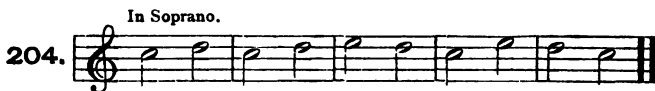
NOTE. — The third example is allowable because of the ambiguous character of the *chord of the diminished seventh*.

*Cross relation* is interdicted for two reasons; viz., because difficult to sing, and because the transfer of a *chromatic* progression to a second voice breaks the melodic succession.

When the modification appears in one of two parts, both of which have sung the unmodified tone in the previous *chord*, the relations are pure :



d. The repetition of progressions within a limited range is to be avoided, for they are monotonous, and make the impression of helplessness.



tones may be introduced with good results, sustained extremes tire the singer, and will therefore fail to produce the desired effects.

High tones are false lights that dazzle the inexperienced, blinding them to safer and more efficacious means with which to express *intensity*.

I will close this chapter with an axiom and a harmonic illustration.

The former is, that composers cannot endow their works with vital strength if they employ other than natural means.

For the latter, I have chosen the *choral* "Nun danket alle Gott" as my basis.

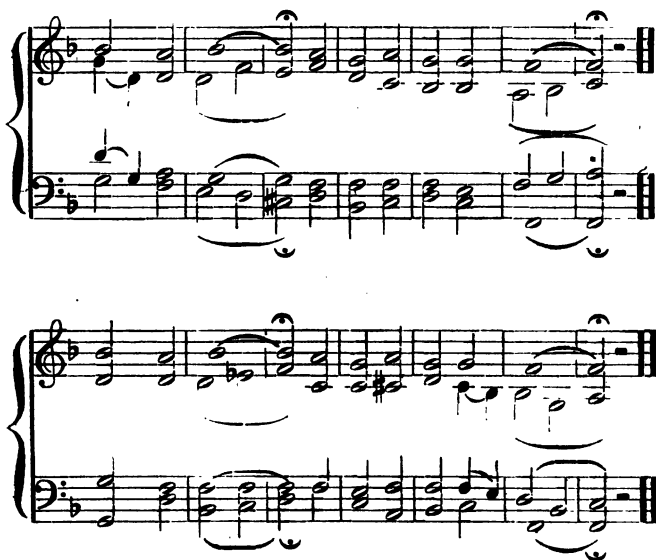
Both of the following settings are unadorned. They differ in almost every detail, and still each keeps *key* affiliation intact, and follows natural lines. They are printed one above the other so that they may be easily compared.

1.

207. 2.

The image displays two musical settings of the hymn "Nun danket alle Gott". Each setting is presented as a grand staff with a treble and bass clef, in the key of B-flat major (two flats) and common time (C). Setting 1, at the top, features a melody in the treble staff that begins with a half note B-flat, followed by quarter notes D, E, F, G, A, B-flat, and a half note G. The bass staff provides a harmonic accompaniment with chords and moving lines. Setting 2, at the bottom, is a different harmonic arrangement of the same melody. It also begins with a half note B-flat in the treble, but the subsequent notes and the bass accompaniment differ from setting 1. Both settings conclude with a final cadence. The page number 207 is positioned to the left of the second setting.

The image displays four systems of musical notation, each consisting of a grand staff (treble and bass clefs joined by a brace). The music is written in a key signature of one flat (B-flat) and a common time signature (C). The notation includes various musical symbols such as notes, rests, accidentals (sharps, flats, naturals), and phrasing slurs. The first system shows a melody in the treble clef with a supporting bass line. The second system continues the melody with some chromatic movement. The third system features a more complex bass line with some triplets. The fourth system concludes the piece with a final cadence. The notation is clear and professional, typical of a music textbook.



A properly formed melody implies both *cadences* (intermediate and final), and harmonic color. These indications are somewhat elastic, but attempts to entirely ignore them must diminish the logical strength.

Details may be varied, but the artificial must be shunned.

The student should plan well his *cadences*, and the chord successions leading to the same, bearing in mind what was said on the subject of relationships, etc., under the head of *modulation*.

He should endeavor to secure variety without incongruity, repose without inadequacy, and individuality without eccentricity.

**NOTE.**—Erk's collection of *choral* melodies is good, but it will be wise to transpose some of them into less familiar *keys*.



## CHAPTER XIX.

## GLANCES BACKWARD AND FORWARD.

## Backward.

I do not claim absolute originality for the foregoing treatise.

It is meant to materialize the spirit that pervaded the oral teaching of my old masters — Hauptmann and Richter — and to throw upon it the light of my own twenty-five year's pedagogic experience.

I have endeavored to so establish each step, that the ordinarily gifted aspirant may climb with assurance.

I have, where compatible with directness, associated the technical and the aesthetic; hoping by so doing, to awaken interest in our neglected science.

When dealing with *parallel octaves* and *fifths* (in Chapter III.), I assigned the breaking of the harmonic thread resulting from their occurrence as the reason for their prohibition. That reason was adequate for the beginner, and is even equally so at this stage; but our finished harmonist may be confronted by a further query; viz., why do *parallel octaves* and *fifths* break the thread of succession? This query I will try to answer.

It, like most troublesome questions that come up during the study of musical science, finds a satisfactory answer in nature's conditions.

We must again look to the oft-cited *overtones* (*harmonics*), of which the *octave* and the *fifth* are the first two, and, therefore, the most important.

They are present in each tone that sounds, are two of its contributive elements, although not heard in the character of *over* or *attendant* tones in correctly written part-music; for, in writing for three or more voices, we, in a measure, emancipate these *intervals*, and endow them with individual weight and *tendency*.

This is accomplished by transferring them from voice to voice, thus preventing their allegiance to their *fundamentals* from becoming too manifest.

The strength of the thread of harmonic connection depends upon the character—the relative positions and movements—of the several parts about which its strands are interwoven.

If their integrity be preserved, each having its independent tendency, our strands will be so adjusted that each will bear its due portion of the responsibility in securing coherent strength.

If their integrity be sacrificed, the strands intrusted to them become inoperative, and the forward movement snaps our weakened thread.

This dropping the significance of a strand (or of the part to which it is committed), is the true reason for the ill-sounding effects of parallel *fifths* and *octaves*; for these progressions are not intrinsically wrong.

If we scan the following, we find that the *soprano* and *alto* drop their independence



in moving to the *chord* on A.

They become attendants on the *bass*, emphasizing its first and second *harmonics* by producing these *intervals*, from it, in two successive *chords*.

This attendant character of the *fifth* is illustrated in the following five-part example :

209.

Here, the second *bass* has no individual tendency. It merely serves to increase the sonority of the lower part through adding the second *harmonics* to its successive tones.

It might be still further increased by adding *octaves* :

210.

In each of these cases, the voices not involved in the parallel movement are adequate for the preservation of the thread of connection.

These forms of reinforcement are also often employed in the upper parts. The organ *stop* which produces the *twelfth* is an admirable illustration of the added *fifth*.

Putting the matter in concise form, *parallel fifths* and *octaves* are not vitally wrong, unless they engender the loss of harmonic import to essential parts; for then we have successions without connection. Our thread breaks.

### A Glance Forward.

Let us look at the advantages which should accrue to one possessing a good experimental knowledge of *harmony*.

*a.* He should be able to read music analytically, which will bring him into close relations with the composer's intention, and define, in detail, the significance of his employed means. This will lead to logical renderings and facilitate reliable memorizing.

*b.* He should be able to set natural harmonies over against any given *cantus*, and to write or play correct chord-successions.

The student must be tireless in applying the resources he has acquired. He must weigh and compare modes, in order to develop discrimination.

Ambition can impart momentum, but it cannot be trusted to guide our progress.

Keen self-criticism will, however, keep us on a safe upward path.

*Counterpoint*, *canon*, and *fugue* must stand on a firm harmonic basis.

A master of harmonization need feel no apprehension while glancing forward into this, for him, unexplored field.







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